The use of fertilizers could perhaps improve the yield, because the small quantity of water could then be more effectively utilized. This, however, requires experiments before the most economic dosages can be found.

The methods and agricultural implements are traditional and could be developed over the long term.

Animal Husbandry

Livestock raising is the second important means in living. There are about 160 000 sheep, 100 000 goats and 90 000 cows in this area. The animals utilize the rest of the land, which is not arable.

It seems to be a fact that the number of animals has been determined by natural conditions, and cannot be increased without causing a survival risk to existing ones. On the contrary, the quantity of animals is already causing some degree of overgrazing. The growth of forests in particular, has been hampered by pasturing.

The best potential would seem to lie in improving animal health conditions, so that a smaller quantity of animals could give the same economic results, and by e.g. improving the quality of leather even a better income.

Mining

Small quantities of low quality iron ore and alluvial gold are found in this area. In Glik, Shahr-i-Bozurg, there is a copper occurrence worth a field examination.

Forest resources

There are quite vast areas called forests in this region growing pistachio and juniperus, but as mentioned under Animal Husbandry, the forests are suffering from being used as pastures. Mulberry trees also grow here and there, and in the small irrigated areas also small quantities of planted poplar are found.

The wood is as mainly utilized fuel during the cold winter time, and this also causes overutilization.

With proper planning of land use, these forest resources could be developed.

Handicrafts and Small Scale Industries

Handicrafts are made mainly for local use. However, part of the products are sold to nomads passing through this area every spring and fall.

An inventory of products made can be found in the corresponding sectoral report. Volume III, page 73.

The two main handicrafts sectors that could and should be developed are woollen and leather handicrafts.

Leather handicrafts suffer partly from defects in the quality of leather, and also from the lack of raw material because most of the leather is sold outside Bahakhshan as raw skins. This business, as a whole, has a good development potential.

Some of the woollen handicrafts products are of high quality and could be exported immediately. The problem is the lack of proper marketing channels, so that prices remain too low.

Over the long term, these two main handicrafts sectors could also form a basis for small scale industries.

3.2.14
Physical Infrastructure

Transport

The main road from the Kunduz and Takhar Provinces to Badakhshan passes the Faizabad region along the Kokcha river banks. It is motorable almost throughout the year, but especially in spring time vulnerable and often blocked and washed out by floods. This road does not, however, serve the people of this region effectively enough, since the majority of the people do not live in the Kokcha river valley.

There are no bridges over the Kokcha river between the towns Keshem and Faizabad. That means, that the northern part of Faizabad, Ragh and Shahr-i-Bozurg have no connections to the main road.

Shahr-iBozurg is connected with Rustaq in Takhar Province with a horse track, which then goes to Ragh and over the hills to Faizabad.

All local transport is carried out using horses' donkeys' or peoples' backs.

From Faizabad to the region south of the Kokcha river there is a track, which is partly jeepable, and a horse track links this region to Keshem over the hills.

There is an airfield in Faizabad connecting Badakhshan with Kunduz three times weekly. Fligts, however, are often irregular because of difficult weather conditions. And, in any case, the access to and from the airport is difficult for the people. In Ragh and Shahr-i-Bozurg there are no airfields.

Energy

Lack of energy is one of the biggest difficulties here. Most of the forests have already been used as fuel. Animal manure is the main fuel, and in most of the area the only fuel.

The Kokcha river has a huge water power potential.

Close to Faizabad there are some warm springs, but there is no knowledge of the quantity and temperature of the water. However, this could be a source of potential geothermic energy.

Faizabad is electrified 4 to 5 hours daily by using Diesel Aggregates. Two small scale Hydel Power Stations (510 kw together) are under construction.

Telecommunication

Faizabad is connected with Kunduz by a two-wire telephone line, but this connection is not reliable. From Faizabad there is a one-wire connection to the centres of Ragh and Shahr-i-Bozurg. This connection is extremely sensitive to disturbances. Most of the people have no telecommunication facilities.

Faizabad also has a wireless station, and from time to time it is possible to exchange cables with the outside world.

The most reliable communication connection is the wireless of the Bakhtar Airlines which can be used in emergency situations.

A three-channel telephone system from Kunduz to Faizabad is under construction.

Information media

There is at least one radio receiver in every village, and the people greatly enjoy listening to the programmes. However, the mountains often prevent the programmes from reaching Badakhshan, so that it is easier to listen to the programmes of Radio Pakistan and Radio Tashkent.

A daily newspaper called BADAKHSHAN is published in Faizabad. It is printed by using a Sincoprint press, using foot power because of the lack of electricity.

About 1-180 copies of the 4-page newspaper are distributed. The main language is Dari; a part of the texts are published in Pashto.

A small number of Kabul newspapers and journals are also distributed in Badakhshan.

3.2.15
Social Infrastructure

Health

There is a Central Hospital in Faizabad for internal diseases only, (the only hospital in Badakhshan) lead by a medical doctor (also the only doctor in Badakhshan for the time being, the health centres in Jurm, Darwaz and Keshem being unmanned).

The rest of the region has no health services at all.

In Faizabad, there is also a Mother and Child clinic organized by UNICEF. The services of this type of clinic are extremely important when considering future development in Badakhshan but, unfortunately, one clinic alone cannot serve the needs of a large province with difficult transport connecitons. On the other hand, it is difficult to get qualified people to work in the remote areas.

3.22
Darwaz and Khwahan

3.221
Location and Geography

The woluswali of Darwaz and the alaqadari of Khwahan are located in the northernmost corner of Badakhshan, surrounded in the east, north and west by the river Darya-i-Panj, which also forms the boundary between Afghanistan and the U.S.S.R. The river bank is mostly very steep and the valley bottom extremely narrow. However, where tributaries enter the main stream or the valley widens, there is often enough land to support a relatively large population. Such places are Nesay, the center of Darwaz, and western Khwahan.

The rest of the area consists of high mountains, mainly above 3 000 metres above sea level. In southern Darwaz, there are peaks permanently covered with snow, forming alpine pastures.

3.222
The people

It is estimated that there are about 50 000 inhabitants in Darwaz and 10 000 in Khwahan. The population density is 12 and respectively 13 inhabitants per sq km. In Darwaz and Khwahan, most of the population live in the narrow valleys, which means that the population density in the inhabited valleys is much higher than the average figures. Ethnically, most of the permanent inhabitants are Tajiks.

Most of the people are engaged in agriculture and animal husbandry. A few handicraftsmen and merchants serve the local needs.

In summer time, numerous nomads with their animals move in from the neighbouring Takhar and Kunduz provinces and settle themselves in the alpine pastures in Dasht-i-Ish area.

3.223
Potentials

Agriculture

As in the whole of Badakhshan, every spot of arable land is cultivated. The irrigation potential has also mostly been utilized. In Khwahan, some 400 hectares of land could perhaps still be irrigated by the use of more sophisticated methods.

The development of agriculture through the use of fertilizers and modern methods is difficult because of the remoteness of the area.

These areas are not self-sufficient in agricultural products, and it will be extremely difficult to develop the agricultural potential sufficiently for the prevailing number of inhabitants.

Animal Husbandry

According to statistics, the number of permanent livestock is about 70 000 in Darwaz and about 12 000 in Khwahan. The number of transport animals is not sufficient for the transportation needs of these areas, so that most of the transport is on foot.

The number of permanent animals cannot be increased (see 3.213), but the productivity of animal husbandry could undoubtedly be improved fundamentally by better animal health services and by the more effective handling of raw materials (see Volume III pages 66 to 67.)

The numerous nomad animals moving into the area in springtime and out in fall could be included in the development programme, so that investments could be utilized more economically (Nomads: see page 35).

Mining

There are several mineral occurrences including lode gold, iron and copper, which have been periodically worked in a primitive fashion by the local people. Predominantly, due to the current lack of adequate transportation, their distance from the consumer markets and their low-grade and -size, these commodities are thus inconsequential when assessing the present problems of Badakhshan.

Forest Resources

The only natural forest is the pistachio forest which is considered government property. In the valleys, also mulberry and other fruit trees are grown. The fruits and nuts are utilized in great quantity.

Mulberry flour is used in most of the area instead of wheat. Lack of transportation facilities prohibits the marketing of the fruits and nuts.

Handicrafts

Only low class leather and woollen handicrafts are made locally. Tools and agricultural implements are bought from the bazaar in Faizabad. Thus, the development of handicrafts can hardly be based on the development of existing skills, but needs a long-term training programme. In the long term, however, handicrafts based on the use of locally produced raw materials, such as leather and wool, could be developed.

3.224
Physical Infrastructure

Transports

There is an air strip in Darwaz and anonther in Khwahan, which can be served by de Havilland Twin Otters but which are difficult to improve because no machinery can be transported to these areas.

For the time being, Darwaz is served twice a week and Khwahan only once a week.

Darwaz and Khwahan have no motorable road connections to the outside world, and also the horse tracks are in bad condition. It is a week's hard travel from Darwaz to Faizabad, and the people of Darwaz and Khwahan are also in lack of good transport animals.

The transport system could be improved in three ways, viz.
- by improving the air transport services
- by improving the condition of the horse tracks, and
- by importing better transport animals, especially mules.

Energy

In the main tributaries of the river Darya-i-Panj there is enough water for small and medium sized power stations, but there are probably not sufficient economic reasons for the exploitation of this source of energy. The alpine pastures are based partly on peat, which could perhaps be used also as a source of energy.

Telecommunication

There is a one-wire telephone connection between the centres of Darwaz and Khwahan to Faizabad. This connection is unreliable and exclusively serves administrative needs.

Social Infrastructure

Health

There is a health centre in Darwaz, but it is difficult to get qualified personnel to work there. In practice, public health services are practically non-existent in this area. The establishment of a sub-health-centre in Khwahan has been planned.

3.23

Jurm, Baharak and Kerano-Menjan

This district consists of the woluswali of Jurm, and the alaqadaries of Baharak and Kerano-Menjan, reporting to Jurm.

3.231

Location and Geography

The district is located in the central and southern parts of Badakhshan. It is mainly covered by high mountains and more than half of the area is over 3 000 metres above sea level. However, the rivers Kokcha, Warduj and Zardew have cut their valleys through the mountains, and especially in southern Baharak and in Jurm the valley is broad enough for effective agriculture. In northern Baharak, the valley of the river Shewa forms a wide alpine pastureland. Kerano-Menjan is located on the high mountain range of Hindukush, and many of the mountain peaks here are permanently covered by snow.

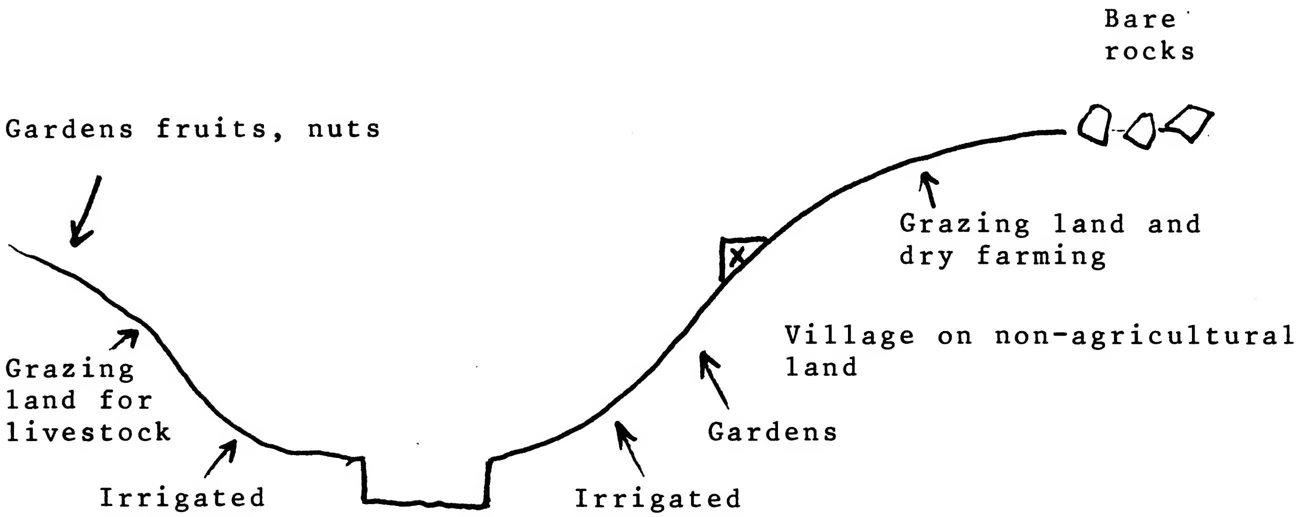
3.232

The people

There are about 50 000 inhabitants in Jurm and about 40 000 in Baharak. The population density is about 14 people per sq km. In Kerano-Menjan, there are about 7 000 people, which gives a population density of only 2 inhabitants per sq km.

In this district, the people live mostly in the river valleys having their winter camps near the rich agricultural lands, and moving at least part of the family and the animals to their winter camps on the mountains close to these (vertical nomading).

An ecological sketch showing the land usage:


Bare rocks
Gardens fruits, nuts
Grazing land and dry farming
Village on non-agricultural land
Grazing land for livestock
Gardens
Irrigated
Irrigated

The main occupation is agriculture supported by animal husbandry.

Ethnically, about two thirds of the people are tajiks, the rest are uzbaks, hazaras, sadaats and pushtoon. Several minor ethnic groups are also represented.

3.233 Potentials

Agriculture

There is a good potential for the development of agriculture and related fields in Baharak and Jurm, especially in the wide valley of the three main rivers in southern Baharak.

Despite official statistics which show that 100 per cent of the irrigable land is already irrigated, it seems to be a fact that the irrigated field area could be considerably increased through the use of more modern techniques (see page 67, Volume II).

In this region, agriculture could also be improved by the use of fertilizers and more sophisticated methods. The production of new crops, vegetables etc. could also be introduced.

The traditional opium poppy fields are also, located in the Jurm area. Especially here, crop substitution could and should be introduced.

In Dasht-i-Feraq, in southern Baharak, there is a governmental garden and experimental farm, which could be used as a basis for a future agricultural development centre.

The best potential for economic growth in this area, however, probably lies in fruits and walnuts. Badakhshan is renowned for its fruits and nuts, and the valleys of Zardew, Warduj and Jurm are the most important fruit-growing areas of Badakhshan. Apples, apricots, cherries, mulberries and walnuts are produced in great quantity. If transport was more readily available better income could be derived from their export.

Animal Husbandry

The number of livestock is approximately 59 000 in Baharak, 86 000 in Jurm and 32 000 in Kerano Menjan. Particularly in Kerano Menjan, livestock raising is more important to household economy than crop production. As in Badakhshan as a whole, the number of livestock can hardly be increased, but the development potential is based on improvements in animal health services and on the improved quality of leather and wool as raw materials.

Every spring hundreds of thousands of nomading animals move through southern Baharak to the valley of the river Shewa in northern Baharak and lake Shewa in Sheghnan, and every fall these animals move back to their winter pastures outside Badakhshan. The nomads also buy animals from the local people, partly in the spring time when the prices are lower. The animals are mainly sold and slaughtered on the markets outside Badakhshan, partly in Kunduz, partly in Kabul.

It might be possible to improve the economy of both the local animal owners and the nomads by establishing a slaughter house in Baharak or Jurm and organizing the transport of meat by using refrigerated trucks.

However, more detailed facts are needed about the number of animals which could be slaughtered here, and also about the economy of the prevailing transport system on foot, before any decision can be made in this matter.

Mining

The famous lapis lazuli mines are located in Sare-Sang in southern Jurm (30° 10´North - 70° 49´East). The capacity of this mine is estimated to be about 1 501 thousand metric tons, but only a small part of the deposit is utilized, mainly for jewelry. The mineral could also be used for construction purposes, the greater part being of too low quality for jewelry. Transport from the mines forms the main obstacle to the increased marketing of lapis lazuli. Another problem in the future will be how to keep the price level high enough if the supply is going to be increased.

The rubies of Badakhshan are also famous, but people nowadays claim that the location of the mine has been forgotten. There are rumours that it may be in Jurm or in Sheghnan.

Forest Resources

Also more and better forest is grown in the three rich valleys of Baharak and Jurm, but the demand for wood is still greater than supply. The Zardew valley, however, makes an exception to the rule. Large walnut forests grow in this valley, and the sale of walnuts gives the people a good additional income.

1.
SUMMARY OF THE PROPOSALS

For practical reasons, the proposals for development projects and programmes are presented separately in Volume II of this report.

The summary of these proposals is presented on pages 11, 12 and 13 and the proposed priority order on pages 18 and 19 of Volume II.

In the summaries, the total of the capital investments and average yearly current costs has been calculated from all the projects and programmes proposed, and it has been assumed that the whole programme will implemented within six years. This, of course, is possible only in theory, because only physical restrictions have been borne in mind in preparing this schedule.

In the planning phase, when limiting factors like the availability of funds and human resources as well as the time needed for necessary discussions and negotiations must be taken into consideration, the yearly input will probably be essentially reduced and/or the time schedule at least doubled from these summaries.

If this is the case, it is recommended that not all the funds available be invested in road construction, but the class of the feeder roads be lowered in the beginning, so that the creation of the development organization and the programmes for the improvement of productive activities could also be initiated as soon as possible.

2.
INTRODUCTION, SCOPE AND PURPOSE OF THE REPORT

The purpose of this report is to provide the impetus for a socio-economic development process in Badakhshan, one of the most remote provinces of Afghanistan. This report is primarily meant to constitute an organized source of information in respect of the planning background.

As a first stage in the planning procedure, this report gives a review and analysis of the existing data, assesses additional study and survey requirements and outlines a regional development plan. The aim of this report is also to outline the reorganization measures required in governmental sectors for regional development planning.

When executing the survey, however, the Finnconsult team came to the conclusion, that in the case of

It might be possible to increase this income by the formation of producers´co-operatives. The exploitation of the walnut tree in bigger quantities would cause a decrease in the income now derived from the sales of walnuts, but older trees up to a quantity corresponding to the yearly growth of the forests could be utilized e.g. for veneer production. Before utilization, an inventory of the forest resurces is needed.

Outside the tree river valleys, only pistachio and juniperus are grown in small quantities.

Handicrafts and small-scale industries

The best potential for industrial development in this area lies in the various fruits. Because of the lack of proper transport, only walnuts are exported today. However, there already seems to be an excess production of fruits, too, so exports could be started immediately after the region gets a better road connection. The production of fruits could then easily be increased by intensified and more efficient horticulture. In the longer term, a fruit conserving industry could also be established in this region.

As mentioned before, the establishment of a slaughter house in Baharak or Jurm might be feasible. Before this, however, better roads and electrification are needed. A survey of the number of animals potentially to be slaughtered is also necessary.

The implementation of new agricultural methods will create a need for more sophisticated methods in the metal working handicrafts, too. The traditional skills of the black-smiths form a good basis for this kind of development.

Also, handicrafts based on the use of leather and wool as raw material can be developed. However, improvement of the quality of the raw materials is needed before the products achieve exportable quality.

New handicraft production based on lapis lazuli mineral raw material could be considered, but, because of the lack of local tradition, difficult and time-consuming training will probably be needed before the quality standards of foreign markets can be reached.

3.234
Physical Infrastructure

Transport

The main road from Keshem to Faizabad continues to Baharak along the Kokcha river bank, and is motorable almost throughout the year. The quality of the road is about the same as from Keshem to Faizabad, but not as vulnerable as in the most difficult places west of Faizabad. From Baharak there are two motorable tracks, one along the river Warduj eastwards, and another along the Kokcha river southwards. The latter road ends about ten kilometres before the lapis lazuli mines. From this point a horse track goes over the highlands of Kerano Menjan to the Anjuman pass, and along the Panjir valley to Kabul. This way to Kabul is remarkably shorter than the existing one via Kunduz, but it would be extremely difficult and expensive to construct a motorable road via Anjuman.

There are no airfields in this district. On the other hand, the distance between Dasht-i-Feraq and Faizabad airport is no more than 50 kilometres, so that when thinking about priorities in the development of air transport other districts more remote than Baharak must be preferred.

Energy

All three main rivers may be used as sources of hydro power, and there are also waterfalls that could be utilized for this purpose. The best site for a power station is probably the Kokcha river valley some ten kilometres south of the centre of Jurm.

In Zardew-valley, there are hot springs, which could perhaps be utilized.

In northern Baharak, there are peat deposits, which may also be exploited.

Telecommunication

The centres of Jurm and Baharak, as also the lapis lazuli mines, have a one-wire telephone connection to Faizabad. This connection is at present quite unreliable, but the connection between Baharak and Faizabad will be improved within two years.

3.235
Social Infrastructure

Health

There is a health centre in Jurm, but because of the lack of personnel it does not serve the needs of the people effectively. Two subcentres have been planned, one at the lapis lazuli mines and one in Baharak.

3.24
Eshkashem, Zebak and Sheghnan

3.241
Location and Geography

The woluswali of Eshkashem with the alaqadaries of Zebak and Sheghnan form the eastern part of Badakhshan proper. In the east, the river Darya-i-Panj forms the boundary, and in the south the high range of Hindukush separates Zebak from Pakistan. Also the boundary between the woluswalies Jurm and Eshkashem is drawn on high mountain ranges. This entire area is mountainous and mostly too hostile to be inhabited. Also the river valleys are generally too steep to support human life. Only in the centre of Eshkashem, has a broader river valley been formed.

3.242
The people

In Eshkashem, there are approximately 8 000 inhabitants, in Sheghnan 15 000 and in Zebak about 5 000. The population density is rather low, 6 inhabitants per sq km in Eshkashem, 4 in Sheghnan and 2 in Zebak. The main occupation is animal husbandry. A large part of the people, especially in Sheghnan, are opium consumers, some of them severely addicted.

3.243
Potentials

Agriculture

Generally the conditions are not suitable for agriculture. Most of the area is too high to be cultivated, and also the yearly precipitation is less than in central Badakhshan. Only in a few places, where the river valley is broad enough, is there potential for agriculture. The main agricultural area is located in the centre of Eshkashem, just where the Wakhan corridor begins. Here, some 150 additional hectares of fields can be irrigated, and agriculture on irrigated fields can be improved as in Baharak.

Here also, the improvement of horticulture will probably be the main means of economic improvement. Good fruit is also grown in Sheghnan, but lack of transport facilities is an difficult obstacle to eliminate.

Animal Husbandry

Animal husbandry is the main occupation here, and it could be improved in the same way as mentioned before. Here also improved winter feeding of animals with fodder imported from other parts of Afghanistan could give good results.

Tourism

There is a good potential for hunting, mountain climbing and other types of tourism in this area and especially in the Pamir mountains. Improvement of organized tourism to this area could increase employment and thus give a notable additional income to the people.

3.244
Physical Infrastructure

The main road continues from Baharak as a motorable track in bad condition through Zebak and Eshkashem to the Wakhan corridor. Other roads in this region are only passable on foot or by animal transport.

In Sheghnan, there is an airstrip served once a week from Faizabad.

Also, a one-wire telephone connects the three centres to Faizabad.

3.245
Social Infrastructure

Public health services are non-existent in this district.

3.25
Keshem

3.251
Location and Geography

Keshem woluswali is located in the southwestern corner of Badakhshan. Ecologically, this district differs much from the rest of Badakhshan. Nearly half of the area is less than 1 800 metres above sea level, and more than half is below 2 700 metres. The river Keshem and its many tributaries form a broad valley suitable for agriculture, and also the yearly precipitation increases in a westerly direction from the high mountains.

3.252
The people

Approximately 60 000 inhabitants live in Keshem, and the population density is about 20 inhabitants per sq km. About two thirds of the people are tajiks, the rest are uzbaks, pushtoons, hazaras and others. The main occupation is agriculture.

3.253
Potentials

Agriculture

In Keshem, there is a good potential for developing agriculture. A large part of the fields are already irrigated, and some 200 hectares more could be irrigated by using modern techniques. In Keshem, therefore agricultural results are more reliable than in most of Badakhshan. The yield could be increased and the economy improved by using fertilizers and more modern methods. Here, e.g., crops such as cotton and rice can be grown, which is not possible in most of the rest of Badakhshan.

Animal Husbandry

In Keshem, animal husbandry seems to be a secondary occupation to agriculture, so the people are not as dependent on livestock as the people living in the eastern parts of Badakhshan.

The number of livestock in Keshem is about 102 000. The number cannot be increased, because the pastures are already overgrazed. However, as throughout Badakhshan, the economy of livestock raising may be considerably increased by improving animal health services and the handling of wool and leather.

Forest resources

The forests have been over-utilized, so that only pistachio and juniperus scrubs exist on the mountain slopes in addition to planted trees in the valleys, which do not form forests. However, in this district, forest plantation could give good results over the long term.

Handicrafts and Industries

Handicraft products are produced mainly for local consumption and mainly from local raw materials. Some of these products could be marketed outside Badakhshan. In Keshem, the conditions for natural development are better than in the other districts of Badakhshan. Therefore, improvement of the marketing organization would in this stage already give good results in the development of the handicrafts business. Because of the improvement which will soon take place in connections to Takhar and Kunduz provinces, Keshem should be developed as raw materials supplier rather than as a site for new industrial enterprises.

3.254
Physical Infrastructure

Transports

Today, the new high class road from Kunduz has reached Taluqan in Takhar province, and according to plan will reach Keshem in 1980. Already today the connection from Keshem to the rest of Afghanistan is essentially better than from the rest of Badakhshan. This results also in the fact that the people of Keshem deal more with Takhar and Kunduz than with Faizabad.

From the centre of Keshem, there is another motorable road southwards along the banks of Keshem river. About 37 kilometres of this road are in a rather good condition, and the R.D.D. is working on two new bridges in the southern end of this road. When these bridges have been constructed, the southern part of Keshem will also have rather good road connections according to the standard in Afghanistan.

There is no airport in Keshem, nor is there any urgent need to develop air transport if compared with other, more remote, districts.

Energy

In Keshem, as throughout Badakhshan, water power potential exists. However, a large scale hydro-power station will be constructed on the Kokcha river in the neighbouring Takhar province during the second 7-year planning period, which makes investments in hydro power in Keshem rather uneconomic at this stage.

No other sources of energy are at present known apart from animal manure and small quantities of wood for fuel.

Telecommunication

The centre of Keshem has a two-wire telephone connection to Kunduz and Faizabad. This connection will be improved into a 3-channel system within two years (to be installed in 1977-78). The rest of the province has no telecommunication facilities.

3.255
Social Infrastructure

Health

There is a health centre in the centre of Keshem and a sub-centre in southern Keshem. Another sub-centre has been planned in Artin Jelaw. Because of the lack of personnel, however, the health services are in fact nearly non existent.

3.26
Wakhan

3.261
Location and geography

The Wakhan corridor, one of Afghanistan´s most remote areas, is a geographic panhandle extending between the frontiers of the Soviet Union and Pakistan, and its eastern tip touches Chinese Sinkiang. This narrow strip of land, part of the world highest plateau area, is fringed by the glaciated mountains of the Hindu Kush in the south. Broad valleys of the Big and Small Pamir, which lie north and east of the Wakhan river, form the main physiographic provinces. Because of the high elevations and rugged terrain that characterise most of Wakhan, agriculture is confined to settlements situated along the Wakhan valley. The Pamir area is very suitable pasture land.

3.262
The people

The population of Wakhan totals about eight to ten thousand inhabitants and the population density is as low as one inhabitant per sq km. Western Wakhan up to Darya Bay Tibat in the big Pamir is inhabited by about 5 000 Wakhi people. The Wakhis are an agricultural and partly pastoral community, who have their winter camps in the valleys of the Wakhan and Darya-i-Panj rivers and move their animals to the high valleys during spring and summer seasons.

East of the Wakhis, in the Pamirs, live some three thousand Kurghis, a tribe entirely dependent on livestock - mostly domestic sheep and goats.

3.263
Potentials

There is hardly any development potential in this area. The living conditions are hard, and development of the basic industries, agriculture and animal husbandry, would be more expensive than direct aid. However, the economics of exploiting part of the peat resources available in the Pamir (see page 92,Volume II) are worth studying.

Another probably more realistic way of improving the economy of the people of Wakhan would be to increase organized tourism in this area. A Marco Polo sheep hunting programme organized by the Afghan Tourism Organization has already been in effect for more than 10 years, and also mountain climbing tours have been organized. There is still, however, a good potential for increased tourism in Wakhan.

3.264
Physical Infrastructure

Transport

The main road from Faizabad, Baharak, Zebak and Eskashem is motorable until Quala-i-Panj in Wakhan. The quality of this road can be considerably improved by labour intensive programmes like W.F.P., combined with engineering assistance on a small scale according to the R.D.D.-programme. These programmes have already been started.

There are no air strips in Wakhan, and for the time being there is also a lack of equipment suitable for flights in this high mountainous area, where variable weather conditions are also a risk factor.

A one-wire telephone connects Quala-i-Panj with Faizabad.

3.265
Social Infrastructure

Health

Traditionally, the Wakhi people have been opium eaters. In recent years this has become an addiction, and part of the Kurghis have also become consumers. Although drugs such as opium-tarioc and canabis are not produced in Badakhshan, these drugs are also consumed by the Wakhi people, which makes the situation still worse.

The only health services available in Wakhan are provided by a temporary hospital installed yearly during the hunting season by Afghan Tour in Tulibai Valley.

4.
BASIC DATA

4.1
Analysis of Existing Data

Data have been gathered from three main sources, viz.:

- The Central Statistical Office (CSO)
- The Cartographic Institute
- The local officers

The data from the CSO are based mainly on the 1967 census, which was based on data obtained from the Ministry of Agriculture and directly from the woluswalies. Already these basic sources of information disagree on most points. If compared with data gathered from local officials during this survey, these data, again, differ from both of the sources used by the CSO. It is rather difficult to say whether any of these sources are more reliable than the others. Thus population statistics in particular, are most unreliable. However, a new census project is in progress in Afghanistan, and the results of this census will be available in the year 1978.

Reliable information concerning productive activities is extremely difficult to obtain in a society where most of the production is consumed by the producers themselves, and money is not the main media of exchange. Income statistics are also affected by the fear of additional taxes.

Basic data such as statistics concerning weather conditions and precipitation and also discharges in rivers have only been collected over a short period and do not cover the whole of Badakhshan.

The data from the Cartographic Institute are based on maps on the scale 1:250 000 and 1:100 000. Land use maps are also available on the scale 1:100 000. This information was partly checked by Finnconsult during the field survey, and was found to be rather reliable and useful.

4.2
Proposals for further fundamental studies

The concept of development proposed in this report is based on the establishment of a development organization in Badakhshan. In the proposed organization, a Research and Evaluation unit is also included. It is proposed that this unit be obliged to gather and evaluate additional data needed for development decision-making.

In this report, therefore, in addition to a series of feasibility studies, only three fundamental studies are proposed, viz.:

1. Census of Sedentary and Migrating Population and Livestock in Regions Adjacent to Major Grasslands
2. An Animal Health Survey, and
3. A Botanical Investigation of Pastures.

These studies are presented in more detail as project nos. 5.1, 5.2 and 5.3 in Volume II.

Badakhshan an emergency situation exists which calls for immediate action rather than for normal planning procedure. This situation is caused by the fact that according to an international agreement, the Government of Afghanistan has taken measures to stop opium poppy growing in Afghanistan.

Opium poppy has been the most important cash crop of Badakhshan. On the other hand, opium forms part of the daily diet of some of the people, especially of those living in the more remote districts of Badakhshan. Severe problems have now been caused for both producers and consumers of opium in Badakhshan.

This fact has to some extent affected the contents of this report. Instead of thorough scientific analyses, common sense and the strength of team work have been utilized when preparing and prioritating proposals for measures to be taken. Agreeing to the request of the Government authorities, proposals for additional surveys in this phase have been avoided as far as possible and preference has been given to proposals enabling immediate action preferred.

As a result of this, the main purpose of this report is to form a project document for additional UNDP and other international assistance for the development of Badakhshan.

Thus the major part of this report, Volume II as a whole, consists of a series of proposals for development projects and programmes varying from minor studies to large construction programmes. The proposals have been presented with the intention that UN agencies or other organizations. willing to organize and/or finance parts of the development programme, can make their preliminary decisions on the basis of the information given.

On the other hand, these proposals should not be considered to fulfil the function of final project documents, but the final documents should be prepared in more detail before the implementation phase.

In the proposals, all calculations have been made both in US $ and in Afghanis. The rate of exchange used in this report has been 50 Afs. per one US $ in both directions.

5.
NEEDS TO DEVELOP THE INSTITUTIONAL FRAMEWORK

The present governmental organization is sufficient for the fulfilment of current administrative duties only, and this organization is also partly unmanned, or manned by insufficiently qualified personnel. This is, naturally, partly due to the remoteness of the province and lack of services.

The existing organization should therefore be strengthened so that development programmes could also be carried out. The proposed development organization is presented in Volume II, pages 3 to 5 and 20 to 34.

It is essential in this proposal, that the government official in charge of the development should be the Governor of Badakhshan.with his existing and new staff.

6.
OUTLINE OF A REGIONAL DEVELOPMENT PLAN FOR BADAKHSHAN

6.1.
Obstacles

6.11
Indirect

The 7-Year Development Plan for Afghanistan covering the years 1355 to 1361 (about 1976 to 1982) was in the finalization process in the Ministry of Planning when this report was written. Finnconsult had, unfortunately, no opportunity to become familair with the contents of the plan. Some details, however, were checked from the preliminary plan.

The representatives of Finnconsult were told that the development plan should not be considered as forming any essential obstacle when thinking about the development of Badakhshan because the Ministry of Planning is prepared to make the necessary changes in the plan when development projects and programmes are proposed and the necessary expertise and funds are available.

6.12
Direct obstacles

Remoteness of the Province

Badakhshan is located in the most remote corner of Afghanistan between the Soviet Union, China and Pakistan.

In south, the Hindukush range functions as a rather effective boarder towards Kabul, though there is a horse track through the Anjuman-Pass to the Panjir-valley and Kabul. It is,nevertheless, a weeks´journey and only on foot or horseback.

Thus, the only channel for transport and communication between Badakhshan and the outside world is the motorable track from the Wakhan corridor to Faizabad and further along the Kokcha river towards the Takhar and Kunduz Provinces.

This means, among other things, that the transport costs are extremely high. Also, very few outsiders visit Badakhshan which means that trade as a whole is poorly organized. It is, therefore, quite understandable that the nomads moving every summer to their pastures in Badakhshan and every fall back to their winter pastures benefit from the prevailing situation by importing goods to Badakhshan at high prices and paying low prices for Badakhshan products to be exported from Badakhshan.

The remoteness also makes it difficult for educated people to go to work in Badakhshan, which in turn means that the differences between Badakhshan and the more developed areas tend to increase with time.

Part of the remoteness is caused by the lack of communication and social services. Radio Afghanistan cannot be heard in all parts of Badakhshan, the telecommunication system serves only the nearby the administrative system and is, in addition, very unreliable. Only one newspaper is published and distributed in abt. 1 180 copies. There are no cinemas or other recreation services in Badakhshan. The health services are almost non-existent (only one hospital with one medical doctor, for internal diseases for the whole province).

Severe Relief

Badakhshan is a mountainous region with high mountains and steep river valleys. In Wakhan-Pamir Knot, 83 per cent of the area is over 3 000 metres above sea level. The passes wind through the mountains at between 3 500 and 4 500 metres. A large part of Pamir is covered by perpetual snow and glaciers.

Also in Badakhshan-Proper, high elevations above 3 000 metres constitute nearly 30 per cent of the area, and elevations between 1 800 metres and 3 000 metres about 36 per cent of the area.

The rivers have cut steep valleys in the mountains. The steep mountain slopes are covered with rockfall and talus. In the river valleys, up to three series of stream-laid gravel terrasses occur, often cut several times by recurrent, spring-thaw water floods.

This extremely severe relief, of course, causes difficulties to all sectors of life. The difficulties are particularly significant when thinking about the development of the transport system. There are difficulties in road construction. It is difficult to find suitable sites for air strips, and it is not easy to find types of aircraft suitable for use in this region.

Severe climate

The climate in Badakhshan varies very much from place to place and from time to time.

In most areas, the summer is warm and dry and the winter relatively cold and rainy.

In Badakhshan Proper, especially in areas below 3 000 metres above sea level, the yearly precipitation is about 500 mm, which is enough for dry farming on the hill slopes. The temperatures vary between the extremes of 0° C and 38° C yearly. The daily variation is also quite considerable throughout the year. In winter, cold winds blow from the Pamir mountains, which means that generally no thick snow layers are formed in the valleys and on the lower mountains.

On the high mountains, the weather is colder and drier throughout the year. In these regions, daily floods are caused by the melting snow, which makes travelling difficult in the afternoons.

Where agriculture is concerned, the relief and type of weather divide the farmers into three main groups, viz.:

- crop producers on hill slopes,
- crop producers on irrigable lands, and
- farmers more dependant on animal husbandry than on crop production, living on the higher mountains.

The severe climate causes many difficulties, but the most important are:

- low yields in crop production when the precipitation remains below average
- great losses in animal husbandry during exceptionally severe winters (once or twice in a decade)
- lack of fuel every winter.

Dispersion of Population

The population of Badakhshan lives mainly in small villages each consisting on an average of about 500 households. These villages are spread over the mountains. This is a fact also in districts with a high population density, like Faizabad Ragh and Shahr-i-Bozurg.

This, of course, will make it rather expensive to try to serve all the people with equal facilities and services. In fact, equality in these respects will be nearly impossible to achieve, also over the long term.

Organization Gaps

The administrative organization has mainly been designed for the purpose of keeping internal order. This goal seems to have been reached quite satisfactorily. Some development programmes such as road improvement in connection with the maintenance, some bridge and irrigation canal projects and the World Food Programme have also been carried out quite effectively in Badakhshan. Many the government officers seem willing to work towards the development of Badakhshan. This is especially true in respect of locally recruited officers.

The main obstacles seem to be:

- lack of properly qualified officers. This is partly due to the lack of vocational training in Badakhshan as in Afghanistan as a whole, partly due to facts mentioned earlier under "REMOTENESS".

- lack of development planning and resources.

Drug Addicts

Badakhshan is traditionally one of the leading opium poppy growing regions of the world. Poppy growing was prohibited by the Government three years ago, and it seems to be much more difficult nowadays than it was earlier. As a result of this, the price of opium has been increased three or fourfold within the past three years.

On the other hand, the people living in the most remote districts of Badakhshan, traditionally eat and smoke opium as part of their daily diet. In places where natural conditions are most difficult, this has led to abuse, so that people have become dependant upon opium.

It is essential in this context, that the main consumers of opium do not live in those regions where opium is grown. Also, large quantities of opium are today smuggled from outside Badakhshan, mainly from the Jalalabad region.

The consumers, living in the most remote areas, seldom leave their home regions but trade with peddlars using sheep paid to them for tending flocks belonging to rich feudal lords.

The people living in Darwaz, Sheghnan and the Wakhi people in Wakhan suffer severely fron addiction and extreme poverty as a result of this or vice versa.

It seems to be a fact that the majority of these people wish to be cured of addiction.

It is easy to understand that this kind of drug addiction and the trade behind it cause difficulties in implementating development projects and programmes. It has also created a severe human problem.

No government actions have been taken towards disentoxication programmes.

Social Factors

The main social obstacle in Badakhshan is that the majority of the people are not independent, but on the contrary, very much dependant upon several leading classes. The land seems mainly to be owned by a minority consisting of wealthy land lords from whom the majority of farmers rent their farms. The religious leaders are also powerful. In trade, the local people are dependant on peddling merchants and travelling nomads who also own most of the trucks used for transport. The power of the government officers is not always used solely for the good of the people.

Another problem is caused by the nomads coming from their winter camps outside Badakhshan to their summer camps in Dasht-i-Ish in the Darwaz district and Shewa in Sheghnan district every spring with big cattles of sheep and moving back to the winter camps in the late summer and fall.

The biggest problem in connection with the nomads seems to be where to feed the sheep en route, because there is no legislation regulating these rights. When the nomads have settled themselves with their sheep and transport animals in the summer camps, the problems are minor, because the nomads have gained legal rights to use these pasturelands.

The main routes and pasture areas of the nomads are shown in map no. 6, Volume I. See also page 19 in this volume.

Also the settled people of Badakhshan utilize the pastures on the mountains close to their villages. Sometimes, conflicts occur between the local people and the nomads on the rights to these pastures. Anyhow, the settled people can only run the number of animals that they are able to feed with fodder in winter. This means that the huge alpine grasslands in Shewa and Dasht-i-Ish can only be utilized effectively by nomads who have their winter camps outside Badakhshan.

The number of nomading people and animals has never been counted. Estimates vary from about 600 000 to a couple of million animals. The total number of livestock in Badakhshan multiplies considerably every summer.

The main problem remaining in this context is that both the nomads and the settled cattle-owners try perhaps to feed too many animals so that the fodder remaining in the fall is not sufficient for the needs of the settled animals during the winter time.

6.2
Identification of Objectives

Short-Term

The main obstacles being the remoteness of the area caused by the location of the province, severe relief and the dispersion of the population, the living conditions of the people of Badakhshan cannot be improved over the short-term by diversifying the economy and improving the trade exchange with people outside the province. The main short term objective must therefore be

to improve the self-suffiency of the people of Badakhshan

and

to improve the necessary qualifications for further developemt

Long-Term

In the long term the basic goal must be to give the people of Badakhshan a better quality of life taking into account the needs and potentials of Afghanistan as a whole.

A better quality of life can be achieved through the fulfilment of the following objectives:

to increase,
distribute, and
diversify
the income of the people, both when counted in cash revenue and natural products.

and

to improve the quality and quantity of the social services

6.3
Analysis of Potentials

Agriculture

The only way to increase the quantity of arable land is to increase the proportion of irrigated fields. In this way the weighed area under cultivation will increase and lead to better and more reliable yields.

There are still quite large areas which could be irrigated at relatively low cost by the use of modern techiques combined with local efforts by traditional means.

Where dry farming on hill slopes is concerned, productivity may be increased by using fertilizers and more modern methods and implements. This kind of farming, however, will always be dependent on the time and quantity of rainfalls, so that the potential growth will be minor and the safety factor lower than where irrigation is concerned.

Especially on irrigated fields, the production of new crops, vegetables etc. could be introduced. Also substitutes for opium poppy should be introduced where poppy has been grown.

The best potential, probably, lies in fruits and walnuts. Apples, apricots, cherries, mulberries and walnuts are produced in great quantity, especially in the large river valleys in Jurm, Baharak, Zebak and Eshkashem areas. Improved horticulture could also form a basis for fruit conserving industries.

Also peat and warm springs might be utilized e.g. in greenhousing, see below under energy.

Animal Husbandry

The quantity of the animals cannot be increased because the fodder resources are already over-utilized.

However, the productivity of animal husbandry may be increased in many ways, e.g. by reducing the losses caused by animal diseases and starvation in wintertime, and by improving the quality of skins, leather and wool.

In fact, the best economic result could be reached by reducing the number of animals and at the same time improving management.

Mining

The mineral resources known in Badakhshan do not at present seem valuable enough to be exploited in the near future. The exploitation of the mineral resources is prioritated on the level of the total national economy of Afghanistan, and better resources are found in other parts of the country.

However, the exploitation of the lapis lazuli mines should be continued and could be improved for industrial and construction purposes. As jewelry, the quantity supplied cannot be increased to any great extent without having a negative effect on the price.

Energy

There is a huge water-power potential in Badakhshan, especially in the river Kokcha. Large quantities of electical power can be produced by using this potential.

However, local consumption will not increase to such an extent that exploitation of this potential would be economic. Therefore, the exploitation of the water power resources must also be co-ordinated on the level of the national economy.

Near Faizabad and in the Zardew-valley there are warm springs, which could be a sign of potential geo-thermic energy.

Throughout Badakhshan, especially in the eastern districts, there are big peat deposits, which could perhaps be exploited either as fuel or as an improvement for the soil in e.g. greenhousing and other kinds of effective agriculture. However, one should be careful not to harm animal husbandry by reducing the pastureland area.

Forest Resources

Existing forest resources are too small to be exploited, so long-term programmes are needed to increase the resources.

Handicrafts and Small Scale Industries

The Tajiks are not traditionally skilled in handicrafts, however, products made from local raw materials, namely wool and leather, are already partly salable outside Badakhshan. This potential could be developed, and could result in greater value added to raw materials.

Metal working skill seems to form a good basis for further development by vocational training.

The best potential for the creation of small-scale and maybe later larger-scale industry, lies in the famous fruits grown in Badakhshan, especially in the Baharak, Jurm, Zebak and Eshkashem regions.

Later on, when the organizational basis needed has been created, the meat of the livestock could also form a potential for industrialization.

6.4.
Development Programmes in Progress in Badakhshan

Physical Infrastructure

The main road from Kurduz to Keshem and to Faizabad is under construction, assisted by the U.S.S.R.

A team financed by German Bilateral Aid is constructing a 3-channel telephone connection between Kunduz and Faizabad.

World Food Programme is financing the construction of roads, schools and other official buildings in the most remote areas.

Some bridges and irrigation canals are under construction assisted by the Rural Development Department, Prime Minister´s Office, which in turn is assisted by O.T.C.

Energy

Two small scale hydel power stations are under construction in Faizabad, partly financed and technically assisted by Indian Bilateral Aid.

Social Infrastructure

UNICEF has established a Mother and Child clinic in Faizabad City. The establishment of sub-clinics in other districts is prohibited by remoteness of those districts.

A UNICEF water supply project is also in progress in Badakhshan. This project at present covers anly a few centrally located areas. However, when prioritating the need for an improved water supply in Afghanistan, Badakhshan needs do not receive high priority because the natural water supply there is better than in most other provinces of Afghanistan.

6.5.
Solutions

The solutions are presented in Volume II of this report as a series of proposals for development projects and programmes. The summaries are on pages 12 and 18.

In Badakhshan, the improvement of the physical infrastructure, especially the roads, and the creation of a development organization are considered to be unconditional prerequisites for economic growth and improved social services. It is, therefore, proposed that the improvement of productive activities is at this stage begun in one pilot area only. The development programme should later be extended to other districts. Improved social services can also be offered to the people of Badakhshan only when the remoteness of the province has been reduced and better living conditions may be offered to the qualified personnel required.

3.
INVENTORY OF THE BADAKHSHAN PROVINCE

3.1
General background information

3.1.1
Population pattern

Afghanistan ranks well down in the UNDP´s list of least developed countries (LCDs), and Badakhshan is one of the least developed provinces of Afghanistan. Independent throughout most of its known history, Badakhshan was not formally integrated into Afghanistan until 1896. Its rugged topography and extremes in climate made communications and commerce difficult, and encouraged pockets of little-known peoples to live in relatively isolated areas and to develop their own unique cultural patterns. Just as Afghanistan exhibits a macro-heterogeneity of cultural, linguistic and social patterns on a background of ecological diversity, so in a micro-sense does Badakhshan.

The major ethnic gropu in Badakhshan is Tajik, local Dari-speakers also called Badakhshi or Farsiwan. The Tajik are often referred to according to the region in which they live, such as the Munjani. Large numbers of Turkish-speaking Uzbak also live scattered throughout Badakhshan. Some Hazara (speaking Hazaragi Persian dialect) can be found. Many groups of East Iranian speakers live in the eastern and northern parts of Badakhshan. Among them are the Shugni, Roashani, Wakhi, Sanglech, Zebaki, and Ishkamishi. Many in these minority groups are Isma´iliya, followers of the Agha Khan IV. Other pockets of Moghol (or AliMoghol), former Mongolian speakers, live scattered in Badakhshan; now most Moghol speak Dari as their mother tongue. Groups of semi-sedentary Arab (Dari or Pashto speakers, however) live in the province and others annually migrate into Badakhshan from the outside, occupying summer grasslands, often in competition with other migrating groups, such as Pushtun and Baluch. Few of these three groups live permanently in Badakhshan.

Kirghiz (Turkish-speakers) herdsmen live in the high Pamir Mountains in a zone which separates the Indian sub-continent from Russia, and which touches China.

All the people in Badakhshan are Muslim, and with the exception of the Isma´iliya Shia groups mentioned above and a few Imami Shia (mainly Hazara) groups, the rest are Sunni, Hanafi School.

7.
MEANS TO BE IMPLEMENTED

The means to be implemented have been included in every project proposal separately.

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TABLE no 1

POPULATION ESTIMATES
BADAKHSHAN PROVINCE

Thousands of persons

MINOR CIVIL DIVISION	CSO 1965		GOV	CSO PROJECTION 1975		FINNCONSULT	
	MAI	WOL	1970	MAI	WOL	1965	1975
FAIZABAD	103	107	(137)	129	134	105	130
RAGH	43	43	(56)	54	54	43	50
SHAHR-I-BOZURG	27	29	(43)	34	36	28	35
DARWAZ	43	41	44	54	52	43	50
KHWAHAN	(36)	8	10	(45)	10	9	10
JURM	38	41	42	48	52	40	50
BAHARAK	32	34	(46)	40	42	33	40
KERANO MENJAN	(15)	5	7	(18)	7	6	7
ESHKASHEM	6	6	7	8	8	6	8
ZEBAK	4	5	6	5	6	5	5
SHEGHNAN	14	14	17	18	18	15	15
KESHEM	55	45	(79)	69	56	50	60
WAKHAN	(23)	10	10	(29)	12	10	10
TOTAL	440	387	512	553	486	393	470

CSO	Central Statistical Office
MAI	Ministry of Agriculture
WOL	Local Statistics
GOV	Statistics made by a former Governor

See also Table No. 3

TABLE No 2

POPULATION DENSITY

	Population	Sq.km	Density
FAIZABAD	130 000	3 204	41
RAGH	50 000	2 062	24
SHAHR-I-BOZURG	35 000	890	39
DARWAZ	50 000	4 075	12
KHWAHAN	10 000	777	13
JURM	50 000	3 576	14
BAHARAK	40 000	2 852	14
KERANO MENJAN	7 000	4 393	2
ESHKASHEM	8 000	1 257	6
ZEBAK	5 000	2 161	2
SHEGHNAN	15 000	3 661	4
KESHEM	60 000	3 042	20
WAKHAN	10 000	8 936	1
BADAKHSHAN	470 000	40 886	11.5

TABLE No. 3

MCD	AREA SQKM	POPULATION						WOL POPULATION DENSITY	
		MALE POPULATION 1965		TOTAL POPULATION 1965		POPULATION PROJECTIONS 1975			
		MAI	WOL	MAI	WOL	MAI	WOL	1965	1975
1101 FAIZABAD W	3204	45 275	47 023	102 770	106 740	129 010	133 990	33,3	41,8
1102 RAGH AI	2062	19 113	18 917	43 390	42 940	54 470	53 900	20,8	26,1
1103 SHAHR-I-BOZURG AI	890	12 010	12 613	27 260	28 630	34 220	35 940	32,2	40,4
1104 DARWAZ W	4075	18 965	18 130	43 050	41 160	54 040	51 670	10,1	12,7
1105 KHWAHAN A	777	15 776	3 509	35 810	7 970	44 950	10 000	10,3	12,9
SUBTOTAL	4852	34 741	21 639	78 860	49 130	98 990	61 670	10,1	12,7
1106 JURM W	3576	16 898	18 115	38 360	41 120	48 150	51 620	11,5	14,4
1107 BAHARAK A	2852	14 056	14 797	31 910	33 590	40 060	42 170	11,8	14,8
1108 KERANO MENJAN A	4393	6 480	2 351	14 710	5 340	18 470	6 700	1,2	1,5
SUBTOTAL	10821	37 434	35 263	84 980	80 050	106 680	100 490	7,4	9,3
1109 ESHKASHEM W	1257	2 765	2 753	6 280	6 250	7 880	7 850	5,0	6,2
1110 ZEBAK A	2161	1 925	2 264	4 370	5 140	5 490	6 450	2,4	3,0
1111 SHEGHNAN A	3661	6 242	6 166	14 170	14 000	17 790	17 570	3,8	5,0
SUBTOTAL	7079	10 932	11 183	24 820	25 390	31 160	31 870	3,6	4,5
1112 KESHEM W	3042	24 238	19 633	55 020	44 570	69 070	55 950	14,7	18,4
1113 WAKHAN W	8936	10 250	4 293	23 270	9 750	29 210	12 240	1,1	1,3
11 BADAKHSHAN PROV.	40886	193 993	170 564	440 370	387 200	552 810	486 050	9,5	11,9

FINNCONSULT ESTIMATE IN TABLE No. 1

Few ethnic groups in Badakhshan have maintained racial homogeneity in the physical sense, and Caucasoid-Mongoloid combinations are common: including red or blond hair, blue- or mixed- eye combinations occuring in combination with epicanthic eyefolds and high cheekbones.

Dari is the zone´s lingua franca.

Politically, Badakhshan is a sensitive area, for it borders on three countries: Pakistan, the USSR and China.

3.1.2 Ecology

Ecologically, Badakhshan can be divided into two major zones: Badakhshan proper and the Wakhan Corridor-Pamir Mountains.

Badakhshan Proper

Badakhshan stretches from the entrance of the Wakhan Corridor to the Kotal-i-Anjuman (Anjuman Pass) in the south, up along the Keshm Valley to the west, with the Darya-yi-Panch (frontier with the USSR) forming the northern boundary. High mountains dominate the topography, and about one-half of Badakhshan proper sits over 3 000 metres above sealevel. Much of the northern, eastern and southern areas are over 4 000 metres; only Keshem in the extreme west lies below 1 000 metres.

An inhospitable, but beautifully sculptured region Badakhshan consists mainly of metamorphic and plutonic rocks, dissected by V-shaped valleys which funnel people and domesticated animals into narrow trails. Some valleys are watered by streams, but many more receive water from mountain springs. The Amu Darya (the classical Oxus) river system flows through the area. Along its length in Badakhshan the river is called Darya-i-Panch. It becomes known as the Amy Darya at the point where the Kokcha River empties into the main system at Ai Khanoum, the easternmost ancient Greek town.

Beginning in November, many passes are bloked with snow for 5-6 months, and in spring heavy rains annually wash out roads and generally disrupt commerce and communications.

The local population uses many wild plants for medicinal purposes, in addition to collecting them for fuel, animal fodder, and even human consumption.

Almost all the large wild sheep and goats of Afghanistan are found and hunted in Badakhshan.

MINOR CIVIL DIVISION	POPULATION OVER 6 1965			ESTIMATED 1965		POPULATION ESTIMATES 1975			
	WOLUS WALI	ESTIMATED		NO. OF CHILDREN	TOTAL POPULATION	ADULT MALES	ADULT FEMALES	CHILDREN UNDER 7	TOTAL
	MALES	FEMALES	TOTAL						
1 FAIZABAD	47 020	40 540	87 560	19 210	106 770	59 030	50 890	24 110	134 040
2 RAGH	18 920	16 310	35 230	7 730	42 960	23 750	20 470	9 710	53 930
3 SHAHR-I-BOZURG	12 610	10 870	23 480	5 150	28 630	15 830	13 650	6 460	35 940
4 DARWAZ	18 130	15 630	33 760	7 410	41 170	22 760	19 620	9 300	51 680
5 KHWAHAN	3 510	3 030	6 540	1 430	7 970	4 410	3 800	1 790	10 000
	21 640	18 660	40 300	8 840	49 140	27 170	23 420	11 090	61 680
6 JURM	18 120	15 620	33 740	7 410	41 150	22 750	19 610	9 300	51 660
7 BAHARAK	14 800	12 760	27 560	6 050	33 610	18 580	16 020	7 590	42 190
8 KERANO MENJAN	2 350	2 030	4 380	960	5 340	2 950	2 550	1 200	6 700
	35 270	30 410	65 680	14 420	80 100	44 280	38 180	18 090	100 550
9 ESHKASHEM	2 750	2 370	5 120	1 120	6 249	3 450	2 980	1 400	7 830
10 ZEBAK	2 260	1 950	4 210	920	5 130	2 840	2 450	1 150	6 440
11 SHEGHNAN	6 170	5 320	11 490	2 520	14 010	7 750	6 680	3 160	17 590
	11 180	9 640	20 820	4 560	25 380	14 040	12 110	5 710	31 860
12 KESHEM	19 630	16 920	36 550	8 030	44 580	24 640	21 240	10 080	55 960
13 WAKHAN	4 290	3 700	7 990	1 750	9 740	5 390	4 640	2 200	12 230
BADAKHSHAN PROVINCE	170 560	147 050	317 610	69 690	387 300	214 130	184 600	87 450	486 180

TABLE No. 4

TABLE No. 5

Minor Civil Division	Land in Use					Total Sqkm	Vaste Land Sqkm	Land Area Km^2=100		Weighed Land Area	Relative weighed Land Area
	Forest Sqkm	Pasture Sqkm	Field and Garden								
			Grops Sqkm	Fallow Sqkm	Total Sqkm						
01 Fayzabad	129	726	199	104	303	1158	2048	3206	57,2	12	4
02 Ragh	50	442	77	57	134	626	2037	2663	47,5	12	4
03 Shar-i-Bozurg	77	72	58	8	66	215	675	890	15,9	15	17
04 Darwaz	123	351	221	170	391	865	3210	4075	72,8	39	9
05 Khwahan	58	48	72	17	89	195	582	777	13,9	15	19
06 Jurm	164	262	43	5	48	474	3102	3576	63,9	16	4
07 Baharak	55	193	70	6	76	324	2528	2852	50,9	20	7
08 Kerano Menjan	97	99	99	35	134	330	4063	4393	78,4	24	5
09 Eshkashem	-	158	16	2	18	176	1081	1257	22,4	4	3
10 Zebak	36	90	27	1	28	154	2007	2161	38,6	10	5
11 Sheghnan	50	192	18	8	26	268	3393	3661	65,4	3	1
12 Keshem	62	145	191	129	320	527	2516	3043	54,3	34	11
13 Wakhan	-	149	140	48	188	337	8599	8936	159,6	45	5
1100 Badakhshan	901	2927	1231	590	1821	5649	35841	41490			

Land Use in Badakhshan Province in 1967, per cent

Minor Civil Division	Land in Use						Vaste Land %	Land Area in Sqkm = 100
	Forest %	Pasture %	Field and Garden			Total %		
			Grops %	Fallow %	Total %			
01 Fayzabad	4	23	6	3	9	36	64	3206
02 Ragh	2	17	3	2	5	23	77	2663
03 Shahr-i-Bozurg	9	8	7	1	8	25	75	890
04 Darwaz	3	9	5	4	9	21	79	4075
05 Khwahan	8	6	9	2	11	25	75	777
06 Jurm	5	7	1	0	1	13	87	3576
07 Baharak	2	7	3	0	3	12	88	2852
08 Kerano Menjan	2	2	2	1	3	7	93	4393
09 Eshkashem	-	13	1	0	1	14	86	1257
10 Zebak	2	4	1	0	1	7	93	2161
11 Sheghnan	1	5	0	0	1	7	93	3661
12 Keshem	2	5	6	4	10	17	83	3043
13 Wakhan	-	2	2	1	2	4	96	8936
1100 Badakhshan	2	7	3	1	4	13	87	41490

TABLE No. 6

Badakhshan land use in the Minor Civil Divisions 1967

	FORESTS	PASTURES	FIELD AND GARDEN			TOTAL LAND AREA IN USE	VASTE LAND	TOTAL LAND AREA
			CROP	FALLOW	TOTAL			
TOTAL SQKM	901	2927	1231	590	1821	5649	35841	41490
Fayzabad	14,4	24,7	16,2	17,6	16,6	20,6	5,7	7,7
Ragh	5,5	15,0	6,2	9,7	7,4	11,1	5,7	6,4
Shahr-i-Bozurg	8,5	2,5	4,7	1,4	3,6	3,8	1,9	2,1
Darwaz	13,7	12,0	18,0	28,8	21,5	15,3	9,0	9,8
Khwahan	6,4	1,6	5,8	2,9	1,9	3,5	1,6	1,9
Jurm	18,2	9,0	3,5	0,8	2,6	8,4	8,7	8,6
Baharak	6,1	6,6	5,7	1,0	4,2	5,7	7,0	6,9
Kerano Menjan	10,8	3,4	8,0	5,9	7,4	5,8	11,3	10,7
Eshkashem	-	5,4	1,3	0,3	1,0	3,1	3,0	3,0
Zebak	4,0	3,1	2,2	0,2	1,5	2,7	5,6	5,2
Sheghnan	5,5	6,6	1,5	1,4	1,4	4,7	9,5	8,8
Keshem	6,9	5,0	15,5	21,9	17,6	9,3	7,0	7,3
Wakhan	-	5,1	11,4	8,1	10,3	6,0	24,0	21,6
TOTAL	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

TABLE No. 7

Field Use in Badakshan Province in 1967, in hectares

Minor Civil Division	grains		Crop Production area in hectares				Fruits	Cultivated area	Irrigated Percent of Cultivated area
	Irrigated	Dry	Total	Vegetable	Industrial	Other Crops			
01 Fayzabad	5484	11874	17358	1322	404	162	616	19862	20
02 Ragh	1348	6074	7422	70	22	62	140	7716	9
03 Shahr-I-Bozurg	3242	1774	5016	182	220	200	202	5820	49
04 Darwaz	6062	14190	20252	654	338	360	524	22128	21
05 Khwahan	2700	4112	6812	86	48	40	168	7154	34
06 Jurm	3832	-	3832	206	48	-	198	4284	100
07 Baharak	4618	1224	5842	382	-	204	554	6982	80
08 Kerano Menjan	4760	4672	9432	204	-	-	216	9852	29
09 Eshkashem	850	544	1394	190	32	-	-	1612	38
10 Zebak	2384	296	2680	66	-	-	-	2746	37
11 Sheghnan	608	750	1358	112	-	144	166	1750	40
12 Keshem	5130	13644	18774	-	14	-	282	19070	15
13 Wakhan	10722	1666	12388	552	-	-	1030	13970	88

TABLE No. 8

Irrigation pattern of fields in Badakhshan Province 1967

Minor Civil Division	Percent of the irrigated area			Number of systems		
	Surface water	Spring water	Total =100 ha	Surface water	Spring water	Well or Persian wheel
1 Faizabad	80,5	18,0	5880	24	18	22
2 Ragh	83,0	16,1	1240	25	6	4
3 Shahr-i-Bozurg	59,5	40,5	3212	19	18	-
4 Darwaz	97,7	2,3	8176	14	7	6
5 Khwahan	92,6	7,4	2984	6	7	-
6 Jurm	93,6	6,4	4804	15	9	7
7 Baharak	98,0	2,0	6096	30	4	9
8 Kerano Menjan	100,0	-	3832	20	-	-
9 Eshkashem	100,0	-	690	9	-	-
10 Zebak	100,0	-	2452	7	-	-
11 Sheghnan	90,4	9,6	1040	14	3	2
12 Keshem	92,9	7,1	4800	12	10	4
13 Wakhan	100,0	-	16554	17	-	-
1100 Total	93,8	6,2	61760	212	82	54

Crop Yields in Badakhshan on the basis of statistics for 1967, metric tons

Minor Civil Division	Grain Yield					Vegetables	Other Annual Crops	Fruits	Grain Yield per agricultural population, kg	Weighed Land Area 1) 100	Relative Weighed Land Area 2)
	Irrigated		Non-irrigated		Total						
	Ton	%	Ton	%	Ton= 100						
01 Fayzabad	7294	53.9	6234	46.1	13528	8329	1841	3967	256	12	4
02 Ragh	1793	36.0	3189	64.0	4982	441	528	902	251	12	4
03 Shahr-i-Bozurg	4312	82.8	931	17.8	5243	447	1903	1301	139	15	17
04 Darwaz	8062	52.0	7450	48.0	15512	4120	3348	3375	389	39	9
05 Khwahan	3591	62.5	2159	37.5	5750	542	386	1082	300	15	19
06 Jurm	5097	100.0	-	-	5097	1298	64	1275	177	16	4
07 Baharak	6142	90.5	643	9.5	6785	2407	1642	3568	230	20	7
08 Kerano Menjan	6331	72.1	2453	27.9	8784	1285	-	1391	360	24	5
09 Eshkashem	1131	79.8	286	20.2	1416	1172	43	-	48	4	3
10 Zebak	3171	95.3	155	4.7	3326	4.6	-	-	123	10	5
11 Sheghnan	809	67.2	394	32.8	1202	706	818	719	88	3	1
12 Keshem	6823	48.8	7163	51.2	13986	-	19	1816	353	34	11
13 Wakhan	14260	94.2	875	5.8	15135	3478	-	6633	411	45	5
1100 Badakhshan	68814	68814	31930		100744	25338	10691	26028	253		

TABLE No. 10

TABLE No. 11

Extreme elevations reached by some plants (VAVILOV & BUKINICH) in their principal cultivation areas

Height	Grop
3380 m	Hull-less and hullet barley (Hordeum sativum var. pallidum Serl, H.coeleste L.)
3300 m	Spring wheat (Triticum vulgare)
3130 m	Peas, Spring rye
3100 m	Ervum erwinia L., Beans (Vicia gaba L.), raddish (Raphanus sativus var. rapiferus)
3000 m	Flax, Colza (Brassica campestris L.), Lathyrus sativus, Eruca sativa, Forage Alfalfa (Medicago sativa L.)
2900 m	Apricot
2840 m	Opium poppy
2800 m	Lentils, Winter wheat, Winter rye, Persian clover (Trifolium resuspinatum)
2650 m	Cucumis flexuosus (Tarra), Carrot, Cucumber, Turnip
2610 m	Common millet (Panicum miliaceum and P. italicum)
2600 m	Potato
2580 m	Corn (Zea mays var. indurata, (Flint corn)
2500 m	Apple tree (witout fruits)
2450 m	Walnut (Juglans regia)
2400 m	Melon (Cucumis melo)
2365 m	Almond, Peach, Mulberry (Morbus alba), Sunflower, Dill (Anethum)
2250 m	Grapes (poor quality), Quince
2110 m	Rice
2105 m	Cotton (Gossypium herbaceum)
2100 m	Grapes, Plume
2000 m	Watermelon
1950 m	Pomegranate 1900 Sesame 1040 Sugar cane

Zone of maximum diversity for Afganistan lies at 1500 ... 2000 metres above the sea level.

TABLE No. 12

Number of livestock in Badakhshan Province in 1967

Minor Civil Division	Sheep Ordinary & Persian	Karakul Sheep	Goats	Cows	Buffaloes	Camels	Horses	Donkeys	Poulftry
01 Fayzabad	98 080		45 150	43 670			4 450	19 740	31 810
02 Ragh	54 220		27 340	25 340			7 640	3 470	27 840
03 Shahr-i-Bozurg	8 710		29 740	19 610			1 060	6 490	17 140
04 Darwaz	43 190		19 320	12 530			590	3 190	15 580
05 Khwahan	5 920		3 100	3 190			80	820	10 850
06 Jurm	32 150		39 120	15 420	160		1 000	5 780	28 240
07 Baharak	23 640	2 190	20 960	12 100			1 150	2 770	17 720
08 Kerano Menjan	12 200		4 080	5 520	100		580	1 500	3 000
09 Eshkashem	19 440		8 450	2 290			530	620	8 700
10 Zebak	11 060		3 700	3 230			180	440	1 050
11 Sheghnan	27 530		10 210	5 330			470	360	11 530
12 Keshem	42 360		37 890	21 660			3 110	11 280	35 280
13 Wakhan	9 270		4 150	3 160	930	760	320	850	12 010
1100 Total	387 770	2 190	253 210	173 050	1 090	760	21 160	57 310	220 750

TABLE No 13

Mean precipitation (1964-74) in Fayzabad
(mm)

	1964	65	66	67	68	69	1970	71	72	73	74	Average
Jan	20.1	60.8	15.0	20.5	31.8	119.6	31.8	11.5	48.0	47.3	49.1	41.4
Feb	110.9	138.6	42.3	81.4	25.2	100.2	29.4	52.3	-	62.6	33.2	70.6
Mar	108.1	95.7	103.5	48.4	110.1	153.1	88.0	58.1	163.6	127.8	104.4	105.5
Apr	150.7	83.8	100.8	105.3	85.7	90.4	72.8	86.5	93.3	93.6	59.3	92.9
May	37.6	84.0	31.8	140.2	177.0	127.9	19.8	42.7	134.4	79.3	64.9	85.3
Jun	7.9	0.5	1.0	21.9	18.7	9.5	0	0	23.4	1.2	6.1	8.2
Jul	14.8	29.4	0.9	0	0	2.6	40.1	0	0.7	0	1.8	8.2
Aug	0	7.7	0	0	3.5	0	0	0	0	0	5.0	1.5
Sep	0	0	0	0	0	1.2	6.9	0.3	7.9	1.0	5.3	2.1
Oct	4.8	8.9	71.1	49.1	12.1	60.4	18.1	13.5	6.0	0	6.1	16.3
Nov	17.8	37.4	0	55.2	20.0	33.6	25.6	14.8	25.3	4.6	45.0	25.4
Dec	31.5	8.6	50.1	29.4	92.0	4.4	20.4	10.0	9.2	6.5	105.2	33.4
TOTAL	504.2	555.4	446.5	551.4	576.1	702.9	352.9	289.7	-	423.9	485.9	490.8

But the bulk of the population lives symbiotically with nature, working as farmers, herders or combinations of the two. Both irrigated (abi) and highland, unirrigated (lalmi) crops are grown: wheat, barley, vegetables, and a relatively new crop, potatoes, increases annually in importance.

Two major patterns of herding exist: (1) the summer, long-range, horizontal migrations of Pushtun, Arab, and other groups from the west (Dasht-i-Archi, Iman Sahib) to Dasht-i-'lsh, and southwest (Kunduz, Baghlan, and Pul-i-Khumri) to Shewa; (2) local, shortrange, primarily vertical movements of a small percentage of Badakhshan villagers to lalmi agricultural lands and neighboring Alpine pasturelands. Most of the long-range migrating herdsmen also own farming lands in their winter quarters outside Badakhshan, and part of these groups usually remains behind in the summer to farm the land.

Wakhan Corridor-Pamir Mountains

Many writers have lumped the Wakhan Corridor together with the Pamir Mountains, but, in reality, the two sub-zones exist, ecologically as well as culturally. The Wakhi people (speaking their own Indo-Iranian language), basically mountain farmers, are different physically and linguistically from the Mongoloid-looking, Turkish-speaking, herding (sheep, goat, yak, Bactrian camel) Kirghiz of the Pamir. In addition the Kirgihz are Hanafi Sunni Muslim and most Wakhi are Isma'iliya Shia Muslim.

Two relatively wide valleys exist in Wakhan: one at Ishkashem (4 km across, 5 km long); another at Quala Panja (about one km wide).

The Pamir Mountains (including zones in the USSR, China, and Pakistan) boast more than 100 peaks between 6 000 and 7 600 metres; the highest in Afghan istan is Nochak at 7 470 metres. Travel in the Pamir, which begins at Quala Panja, is difficult, and possible only by horse, yak, camel, or foot. Lorries, however, occasionally make the trip from Ishkashem to Quala Panja.

3.1.3
Administrative Organization

The present administrative organization has neither been designed nor manned according to the needs of rural development. Therefore, the organization perpetuates rather than creates, forming one of the main constraints to development.

Currently, provincial governors, woluswals, and alakadars, as well as police and gendarme officials are appointed by the Ministry of the Interior. Each

TABLE No. 14

Discharges at the hydrological Stations in Badakhshan (m^3/s). (Source, Hydrological Department)

152 Darya-i-Mashar (near Keshem) (1970-73)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
HQ	9.79	7.27	15.4	24.2	52.0	87.4	87.4	54.2	27.5	16.7	18.1	19.1	
MQ	6.57	6.09	6.24	11.2	26.8	45.6	43.1	29.5	17.9	11.2	11.0	18.6	18
NQ	4.89	3.02	0.90	2.36	10.1	18.6	16.7	13.3	7.78	8.10	6.48	5.14	

155. Darya-i-Warduj (near Baharak (1970-73)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
HQ	14.8	14.2	16.8	29.8	85.4	17.8	17.9	15.0	86.0	33.5	22.6	14.8	
MQ	10.7	10.9	10.9	13.1	28.1	88.6	90.7	77.6	47.4	22.6	15.2	12.3	35.7
NQ	7.18	6.66	6.14	8.22	4.67	24.0	52.0	50.0	22.6	16.2	9.78	7.18	

HQ = Maximum discharge
MQ = Mean discharge
NQ = Minimum discharge

TABLE No. 15

Temperatures (1963-75) in Fayzabad in C°

	Average			Extremes	
	Average	Mean Max	Mean Min	Max	Min
Jan	-0.4	5.8	-4.9	14.4	-8.9
Feb	2.8	8.1	-2.6	13.6	-9.3
Mar	7.8	14.3	2.1	16.1	-0.6
Apr	13.5	20.6	7.5	23.2	5.0
May	17.2	25.0	10.1	29.8	7.4
June	24.1	32.9	14.0	36.2	11.8
July	26.6	35.4	16.7	37.1	14.1
Aug	25.6	34.9	14.9	38.0	12.8
Sep	20.0	29.8	10.1	31.5	7.6
Oct	13.0	23.0	5.7	25.9	3.3
Nov	6.9	16.3	1.2	19.2	-2.8
Dec	2.4	9.7	2.4	14.7	-5.2
	13.4				

ROAD CLASSIFICATION, DEFINED IMPROVEMENT LEVELS/KAMPSAX (REF. 23)

Parameters	B1 Road			B2 Road			C Road			D Road		
	Flat	Rolling, Hilly	Mount									
	F	R,H	M	F	R,H	M	F	R,H	M	F	R,H	M
Traffic lanes	2	2	2	1	1	1	1	1	1	1	1	1
Pavement width	6,0 m	6,0 m	6,0 m	4,0 m	4,0 m	4,0 m	4,0 m	4,0 m	3,5 m	4,0 m	4,0 m	3,0 m
Shoulder "	1,5 m	1,5 m	0,75 m	1,5 m	1,5 m	1,0 m	1,0 m	1,0 m	0,75m	0,5 m	0,5 m	0,5 m
Total "	9,0 m	9,0 m	7,5 m	7,0 m	7,0 m	6,0 m	6,0 m	6,0 m	5,0 m	5,0 m	5,0 m	4,0 m
R min (serp.)	-	-	20 m	-	-	15 m	-	-	10 m	-	-	-
Design speed	60 km/h	60 km/h	40 km/h	60 km/h	40 km/h	30 km/h	50km/h	30km/h	20km/h	30km/h	30km/h	-
Pavement type	12 cm stabiliced gragel (and 2 coat surfafe dressing)			7 cm selected gravel 7 cm mech. stab. grav.			selected gravel 17 cm			selected gravel 7 cm		

Pavement Types According to Material Deposits Available

Conditions	Pavement on C and D Roads
gravel deposits available (20 km)	7 cm selected gravel
gravel and cobbles, gravel in small quantities	6 cm chrushed gravel
scarce gravel, sandy subsoil or sand deposits	10 cm cement stab.Sand 5 cm chrushed gravel
gravel and sand scarce, claysilty subsoil	10 cm line stab. subsoil 5 cm chrushed gravel

TABLE No. 16

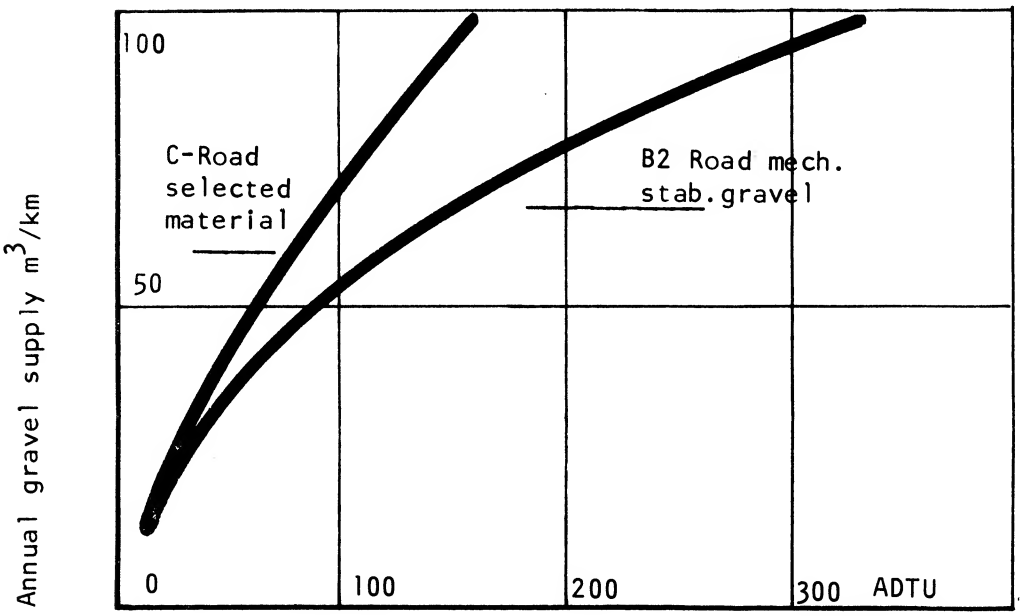
TABLE No. 17

AVERAGE MAINTENANCE COSTS PRICE LEVEL 1972
COST/Km/YEAR

Road Type	ADT	Routine	Grading	Periodic	Emergency	Total	
						Afs	US $
A & B1	150	11600	-	25.300	1.800	38.700	774
(bit.pavement)	400	11600	-	30.400	1.800	43.800	876
	0	6000	500	-	1000	7000	140
	50	7000	500	5400	1000	13.900	278
B2	100	7900	500	8700	1000	18.100	362
Road	150	8900	500	10600	1000	21.000	420
	200	10200	900	12200	1000	24.300	485
	0	4600	500	-	400	5500	110
C	50	5700	500	4000	400	10.600	212
Road	100	6500	500	7000	400	14.400	288
	150	7800	900	9200	400	18.300	366
	200	12000	900	11.400	400	24.700	494
	0	3200	500	-	100	3800	76
	25	4000	500	-	100	4600	92
D	50	4600	500	-	100	5200	104
Road	75	5500	500	2600	100	8700	174
	100	8200	500	5200	100	14.000	280

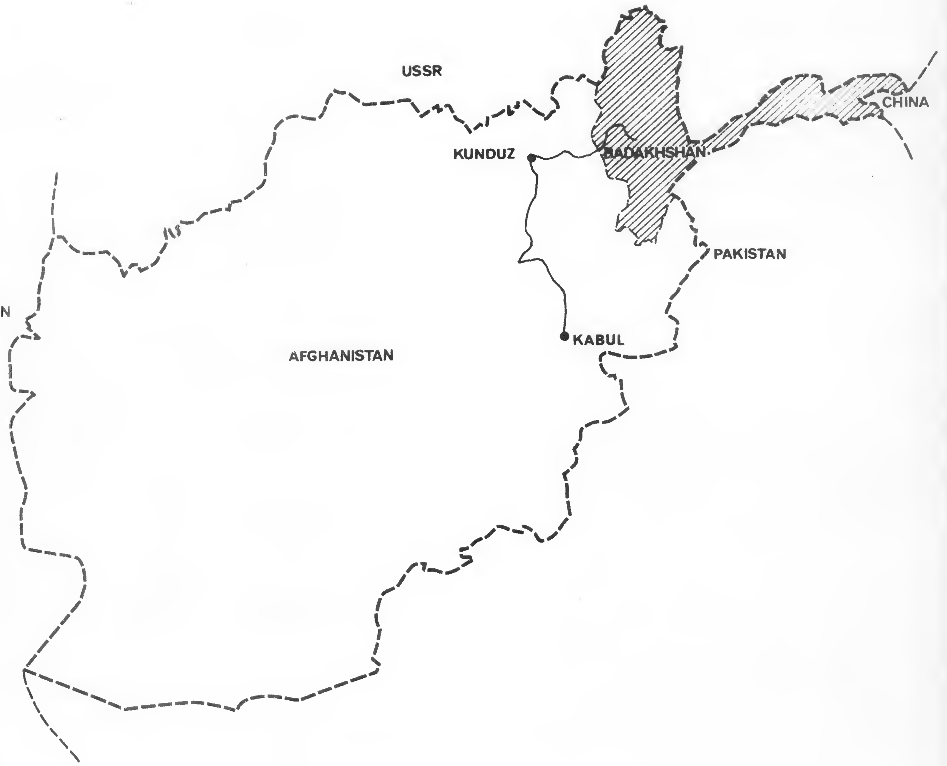
GRAVEL SUPPLY IN PERIODIC MAINTENANCE

Source: Kungliga vag-och vattenbyggnadsstyrelsen



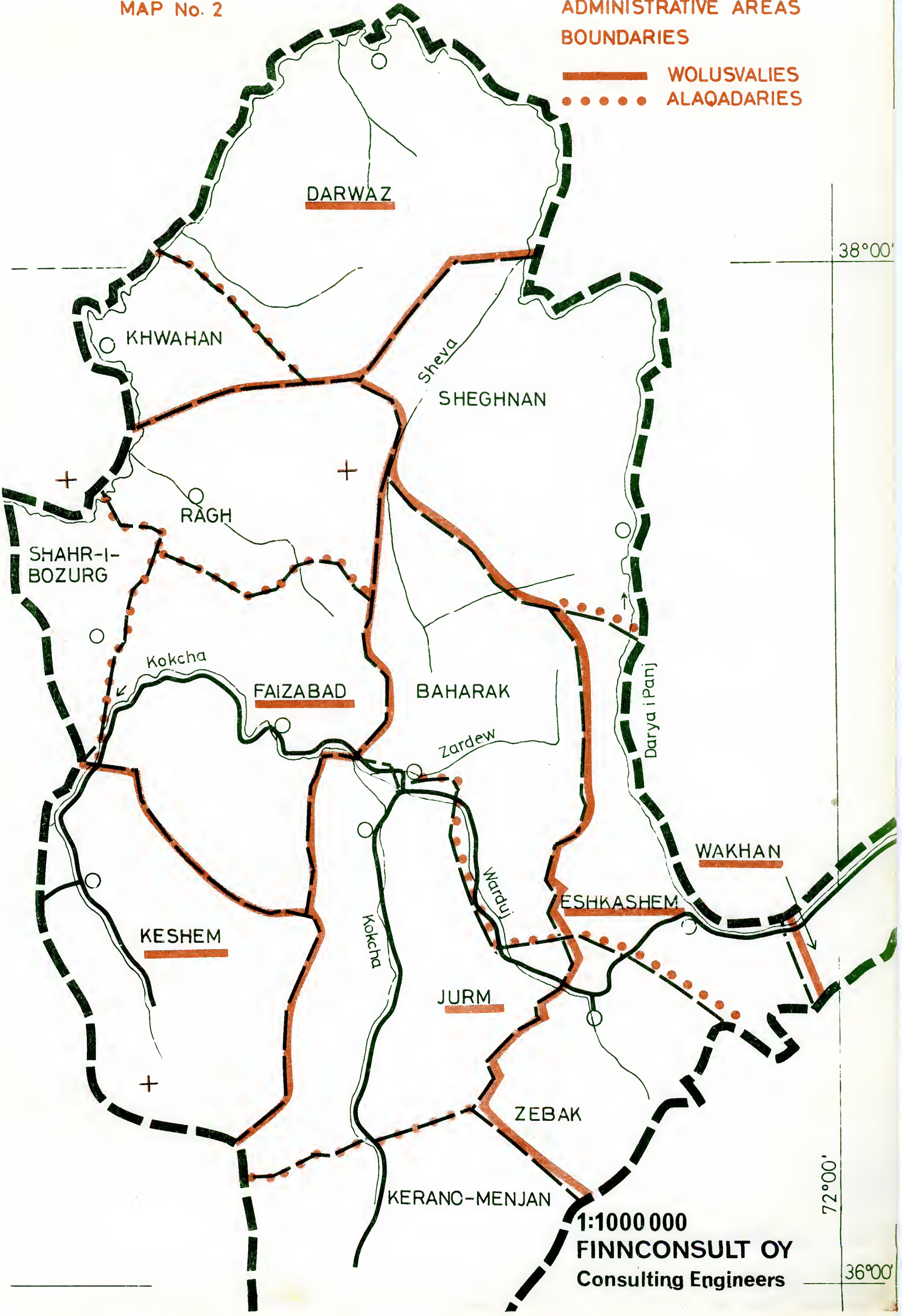
MAP. No 1

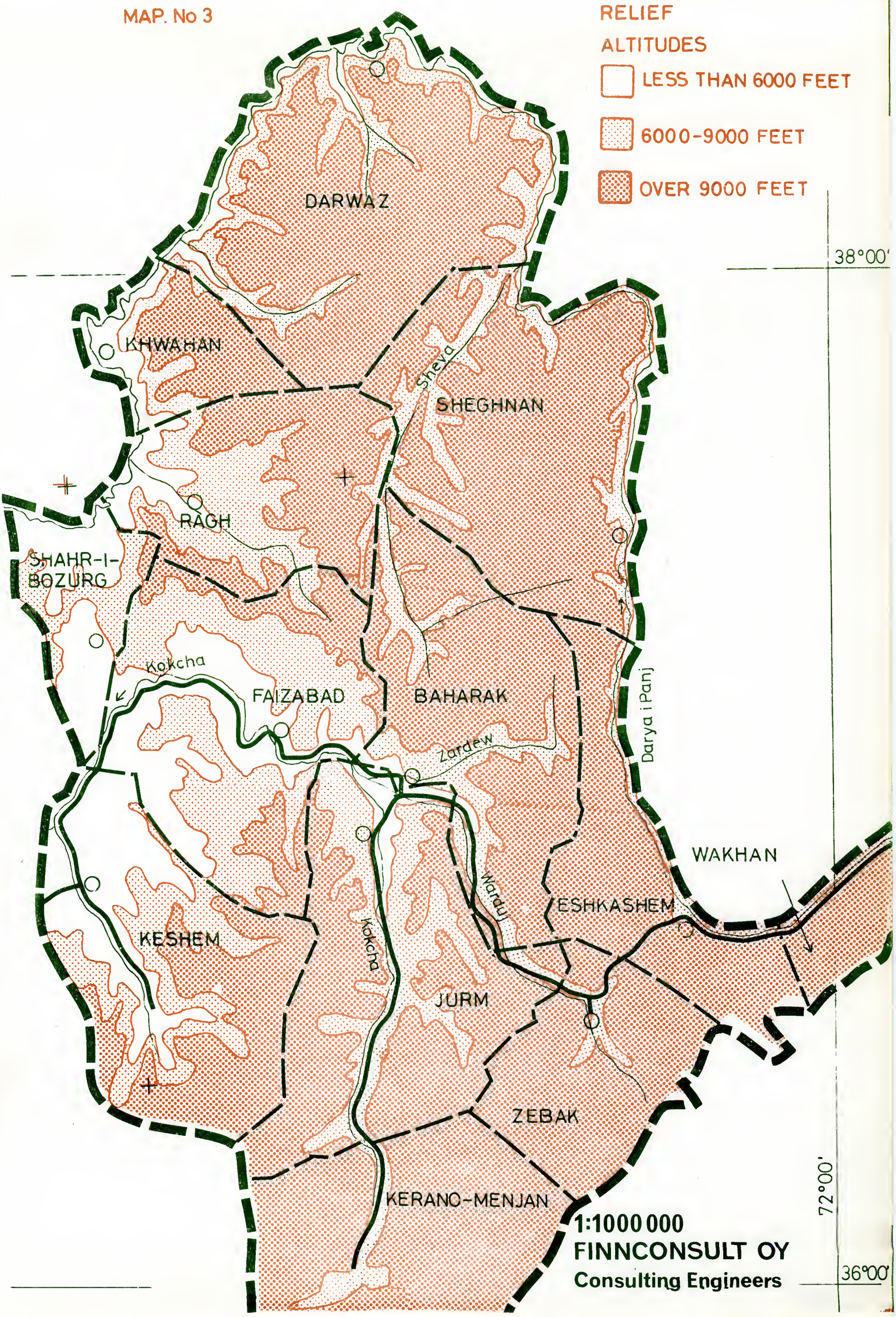
LOCATION OF
BADAKHSHAN PROVINCE



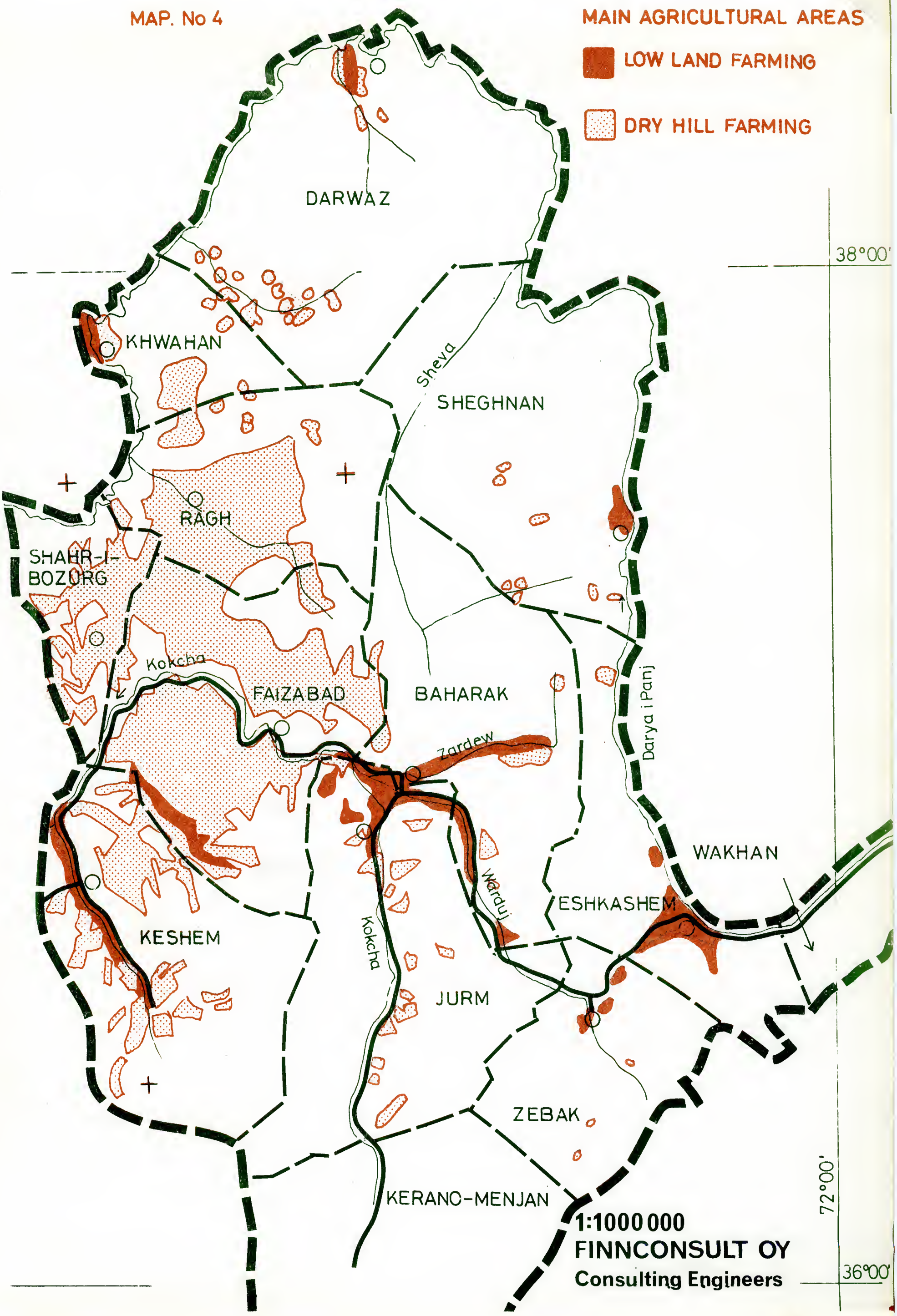
MAP No. 2

ADMINISTRATIVE AREAS BOUNDARIES




MAP. No 3
RELIEF
ALTITUDES
LESS THAN 6000 FEET
6000-9000 FEET
OVER 9000 FEET
38°00'
DARWAZ
KHWAHAN
SHEGHNAN
Sheva
RAGH
SHAHR-I-BOZURG
Kokcha
FAIZABAD
BAHARAK
Zardew
Darya i Panj
WAKHAN
Wardu
ESHKASHEM
KESHEM
Kokcha
JURM
ZEBAK
KERANO-MENJAN
72°00'
36°00'
1:1000 000
FINNCONSULT OY
Consulting Engineers

MAP. No 4


MAIN AGRICULTURAL AREAS
🟥 LOW LAND FARMING
▨ DRY HILL FARMING
DARWAZ
KHWAHAN
SHEGHNAN
Sheva
RAGH
SHAHR-I-BOZURG
Kokcha
FAIZABAD
BAHARAK
Zardew
Darya i Panj
WAKHAN
Wardui
ESHKASHEM
KESHEM
Kokcha
JURM
ZEBAK
KERANO-MENJAN
38°00'
72°00'
36°00'
1:1000 000
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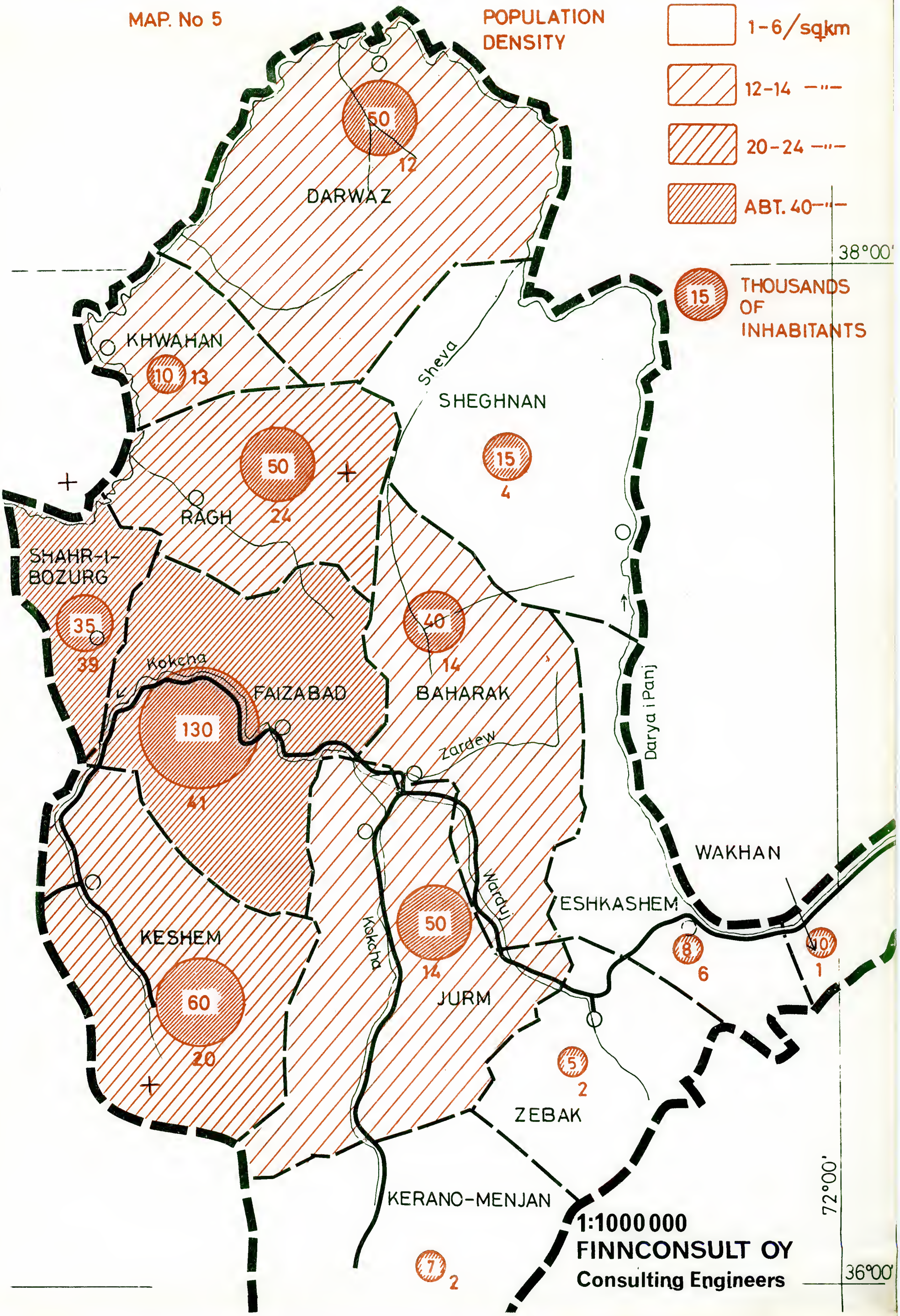
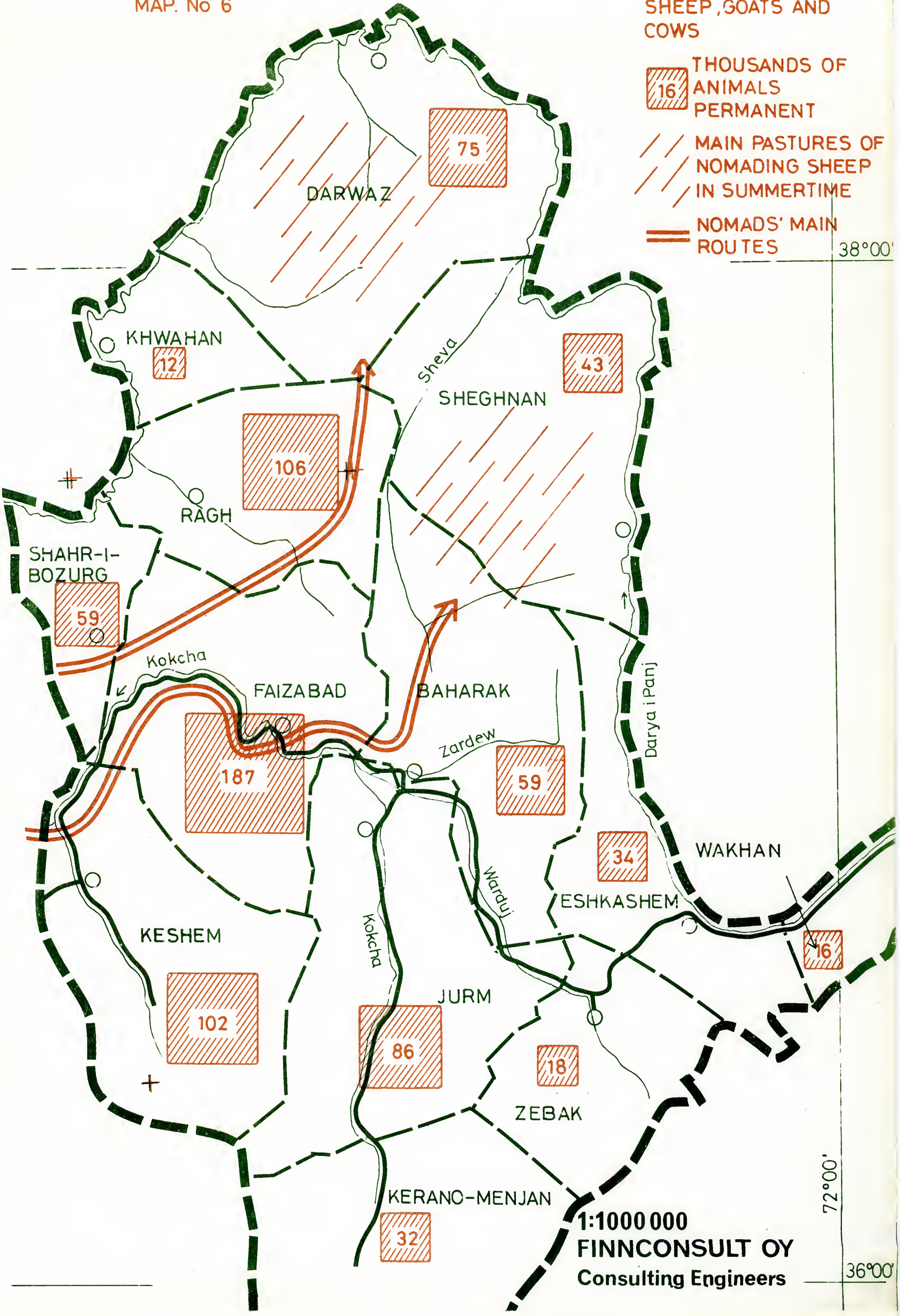

MAP. No 5
POPULATION DENSITY
1-6/sqkm
12-14 –"–
20-24 –"–
ABT. 40–"–
15 THOUSANDS OF INHABITANTS
38°00'
DARWAZ
50
12
KHWAHAN
10
13
Sheva
SHEGHNAN
15
4
RAGH
50
24
SHAHR-I-BOZURG
35
39
Kokcha
FAIZABAD
130
41
40
14
BAHARAK
Zardew
Darya i Panj
KESHEM
60
20
Kokcha
Wardudj
50
14
JURM
ESHKASHEM
8
6
WAKHAN
10
1
5
2
ZEBAK
KERANO-MENJAN
7
2
72°00'
1:1000 000
FINNCONSULT OY
Consulting Engineers
36°00'

MAP. No 6

SHEEP, GOATS AND COWS



ministry appoints its own representatives, who form the Governor's, woluswal's, or alakadar's staff. Mayors of the larger towns (Faizabad, Keshem) are also appointed by the Ministry of the Interior.

In the rural areas, formal and informal levels of power exist simultaneously. The people of a village (or, more often in Badakhshan, a cluster of villages) select a qaryahdar (also known as malik or arbob) by common consent at an open majlis (council) of adult males. The qaryahdar serves as long as he satisfies his constituents; he is essentially a go-between, the link between his people and the outside world, especially the Government. The qaryahdar tries to settle local disputes by negotiations in consultation with local elders and heads of families. If he fails, the case may be brought before government officials, but the qaryahdar and his people try to avoid contact with these if at all possible.

Each qaryahdar has an assistant, called the dawaq, who acts in his stead if he is away.

Local landlords (zamindar) and religious leaders still have considerable power, but often prefer not to serve as qaryahdar. They prefer to pull strings in the backgroud.

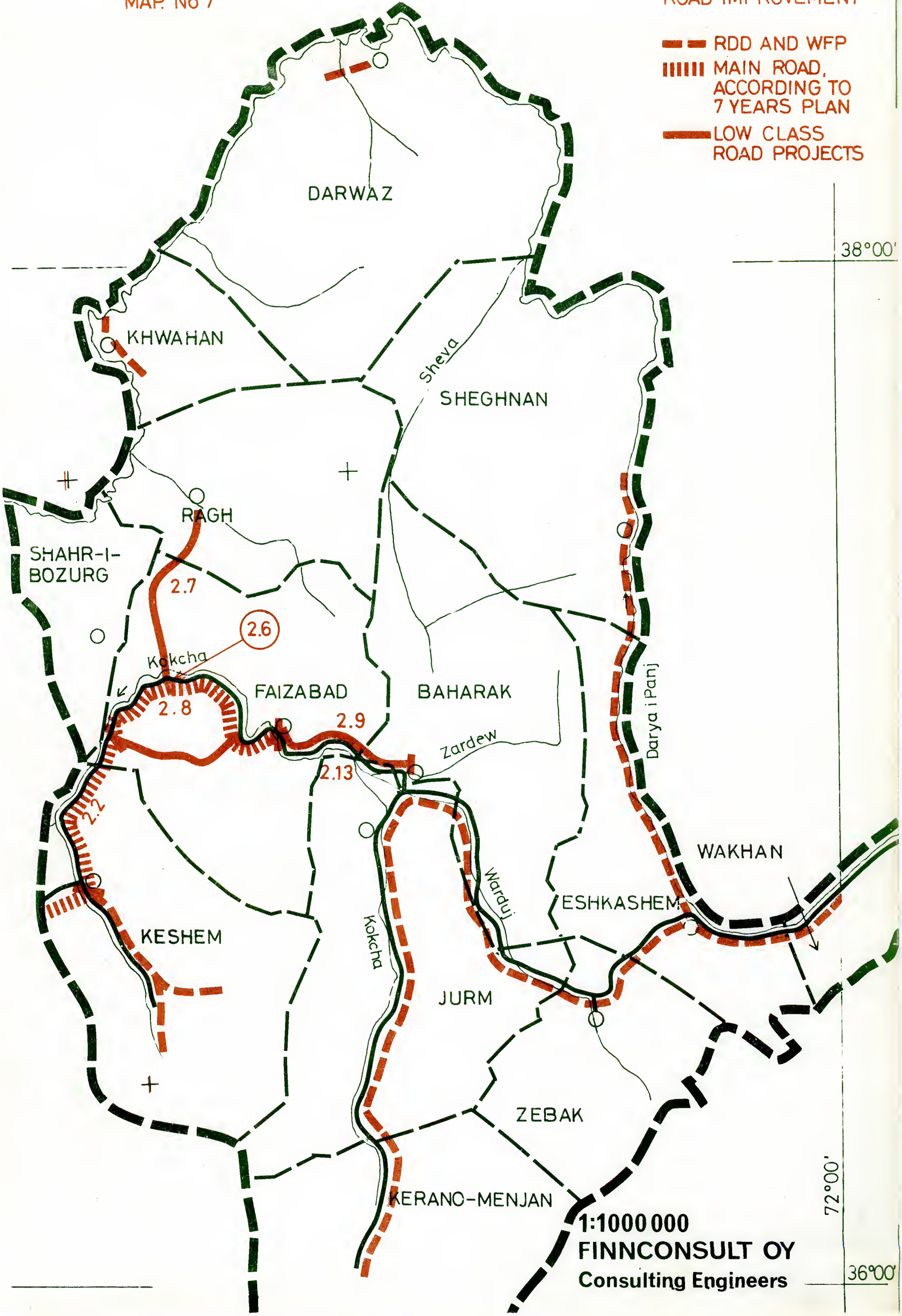
Although they come to Badakhshan only seasonally (June to September), the migrating herdsmen, particularly the "Kandahari" (Pushtun) and Baluch khans, have considerable influence on local decisions when they are in their Yilaq (summer quarters).

Therefore, development decision-making and decision-implementation must involve interaction between the following groups: administrators and technicians appointed by the various ministries and organizations of the central government: the elected qaryahdar of the sedentary rural areas; the zamindars and religious leaders; the khans of the migrating herdsmen; the various kalantar-i-bazaar (elected bazaar headmen) in the major towns, who help control prices and commerce.

The Province is divided into the center of Province (MARKAZ-I-VILAYET), 5 major civil divisions (WOLUSWALI) and 7 minor civil divisions (ALAQADARI) as follows:

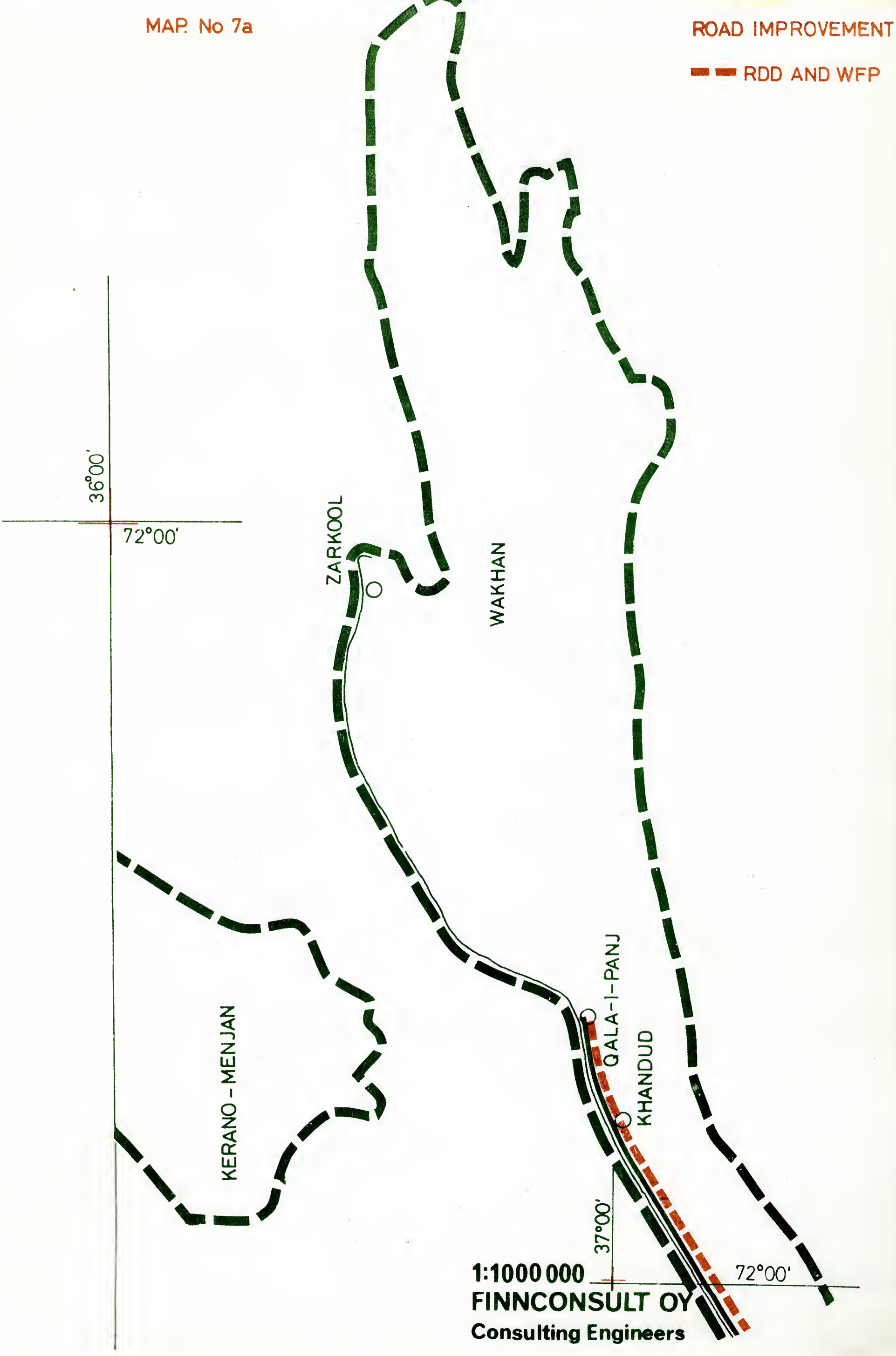
MAP No 7

ROAD IMPROVEMENT

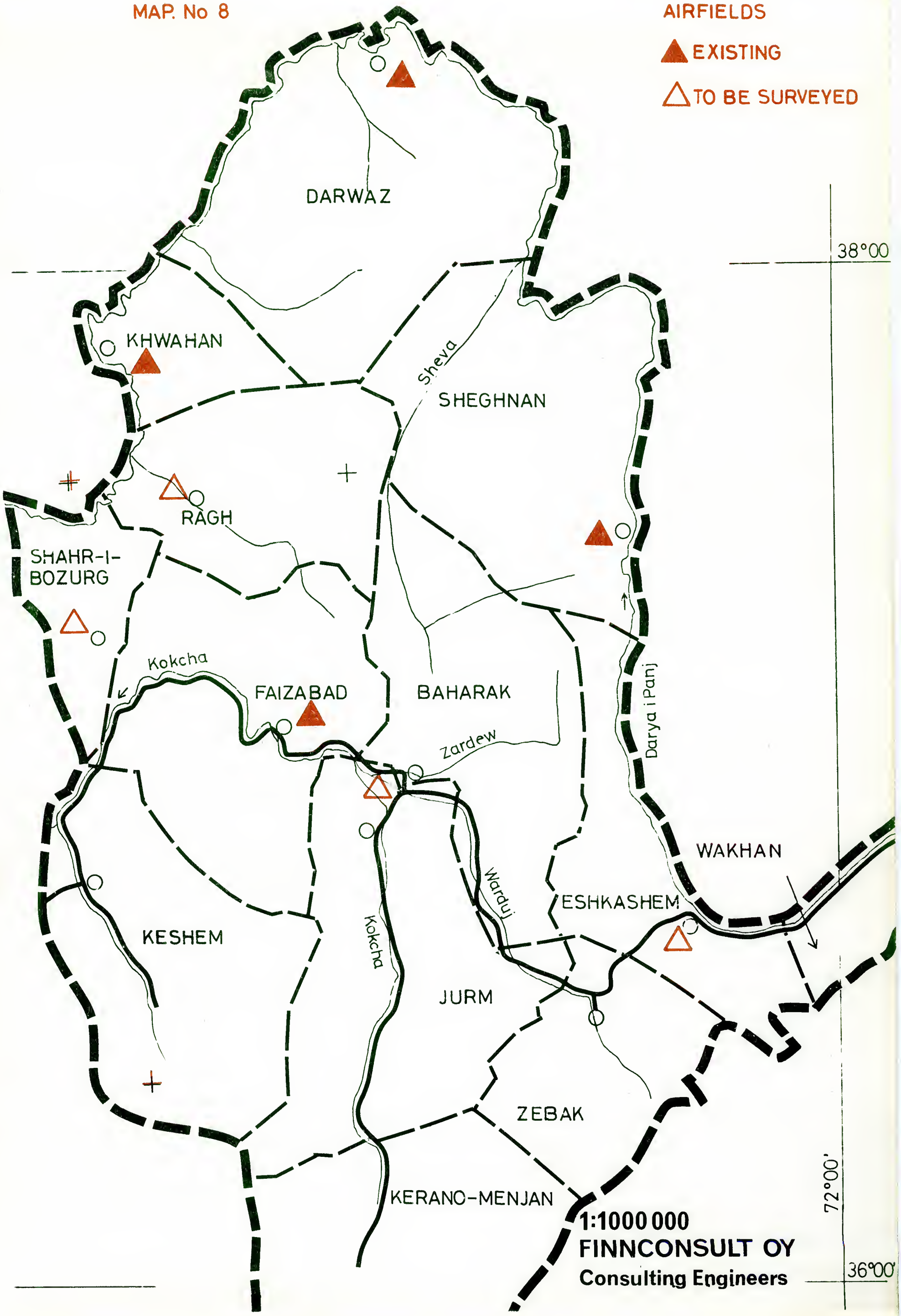


MAP No 7a

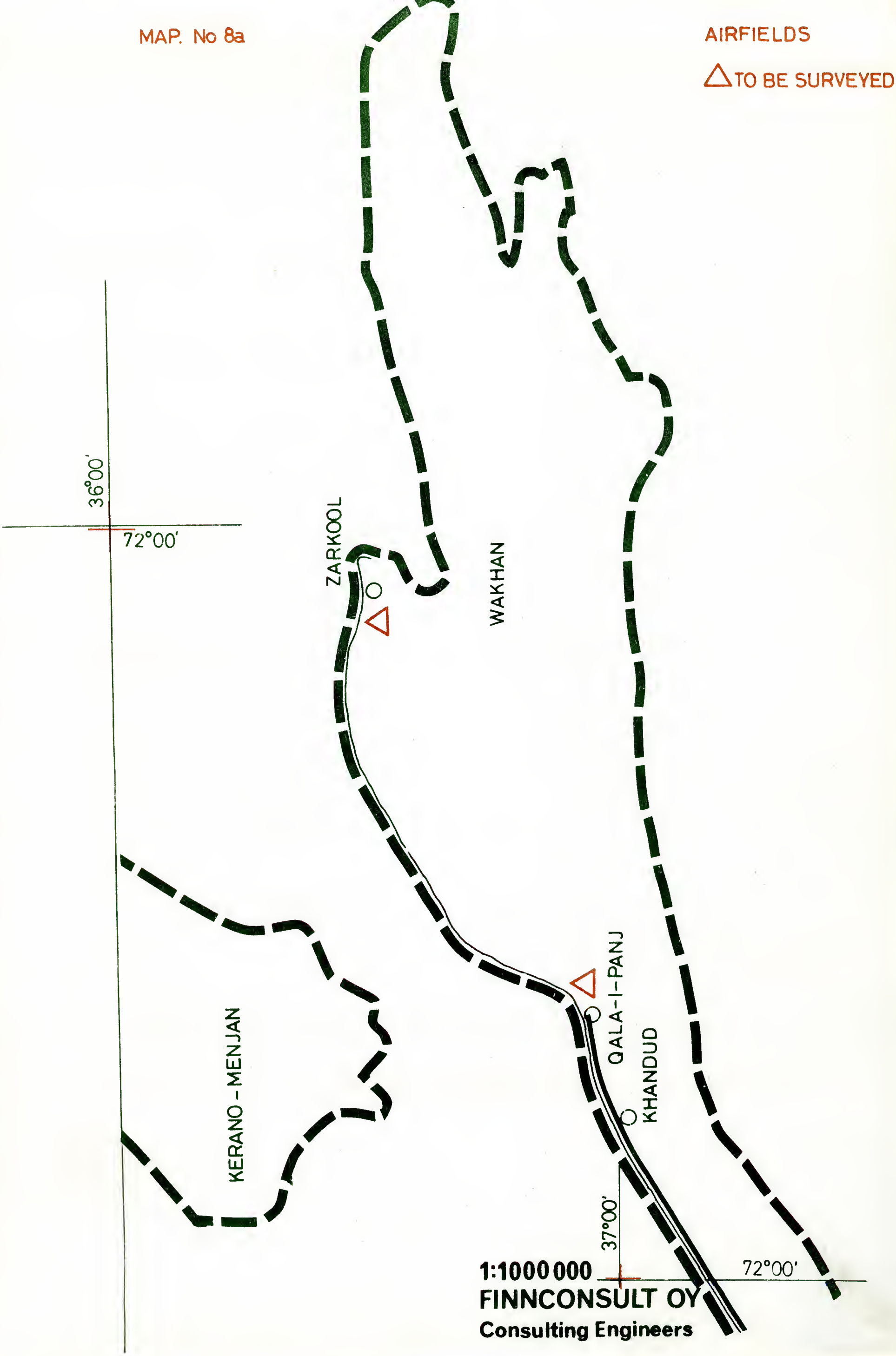
ROAD IMPROVEMENT



MAP. No 8


AIRFIELDS
▲ EXISTING
△ TO BE SURVEYED
DARWAZ
KHWAHAN
Sheva
SHEGHNAN
RAGH
SHAHR-I-BOZURG
Kokcha
FAIZABAD
BAHARAK
Zardew
Darya i Panj
WAKHAN
Wardui
ESHKASHEM
KESHEM
Kokcha
JURM
ZEBAK
KERANO-MENJAN
38°00
72°00'
36°00'
1:1000 000
FINNCONSULT OY
Consulting Engineers

MAP. No 8a


AIRFIELDS
△ TO BE SURVEYED
36°00'
72°00'
ZARKOOL
WAKHAN
KERANO-MENJAN
QALA-I-PANJ
KHANDUD
37°00'
72°00'
1:1000 000
FINNCONSULT OY
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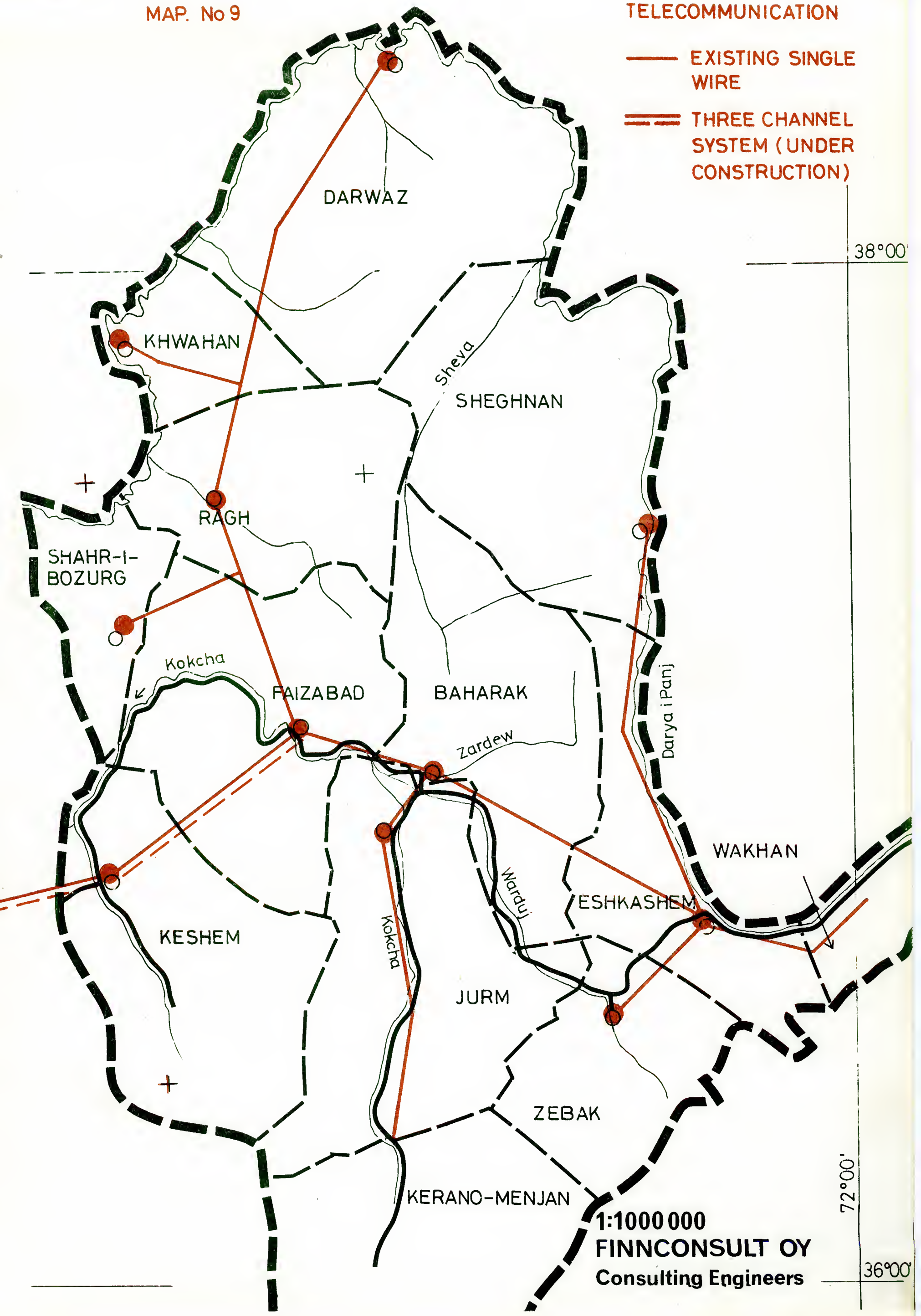
MAP. No 9



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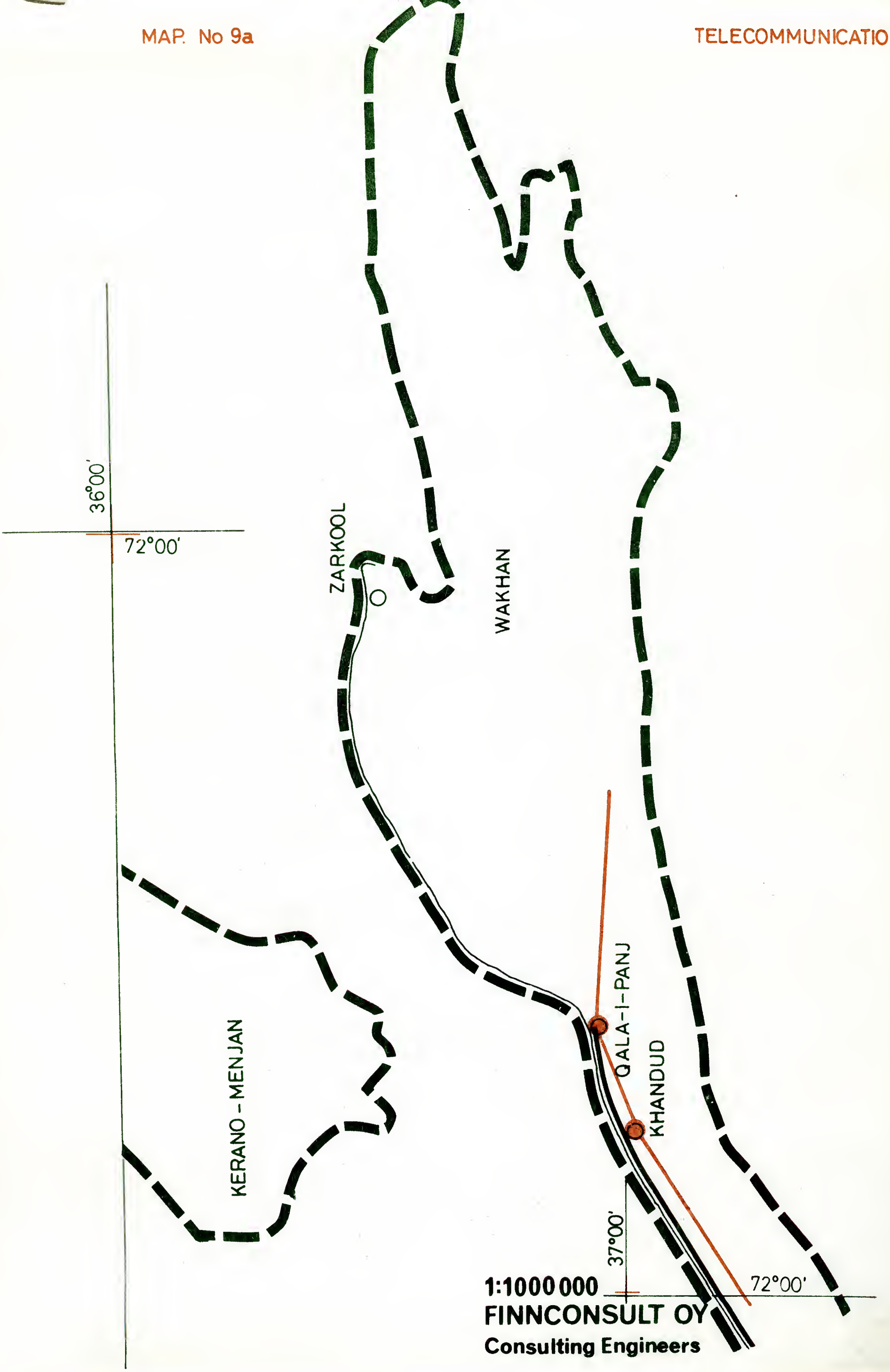
MAP. No 9a

TELECOMMUNICATION



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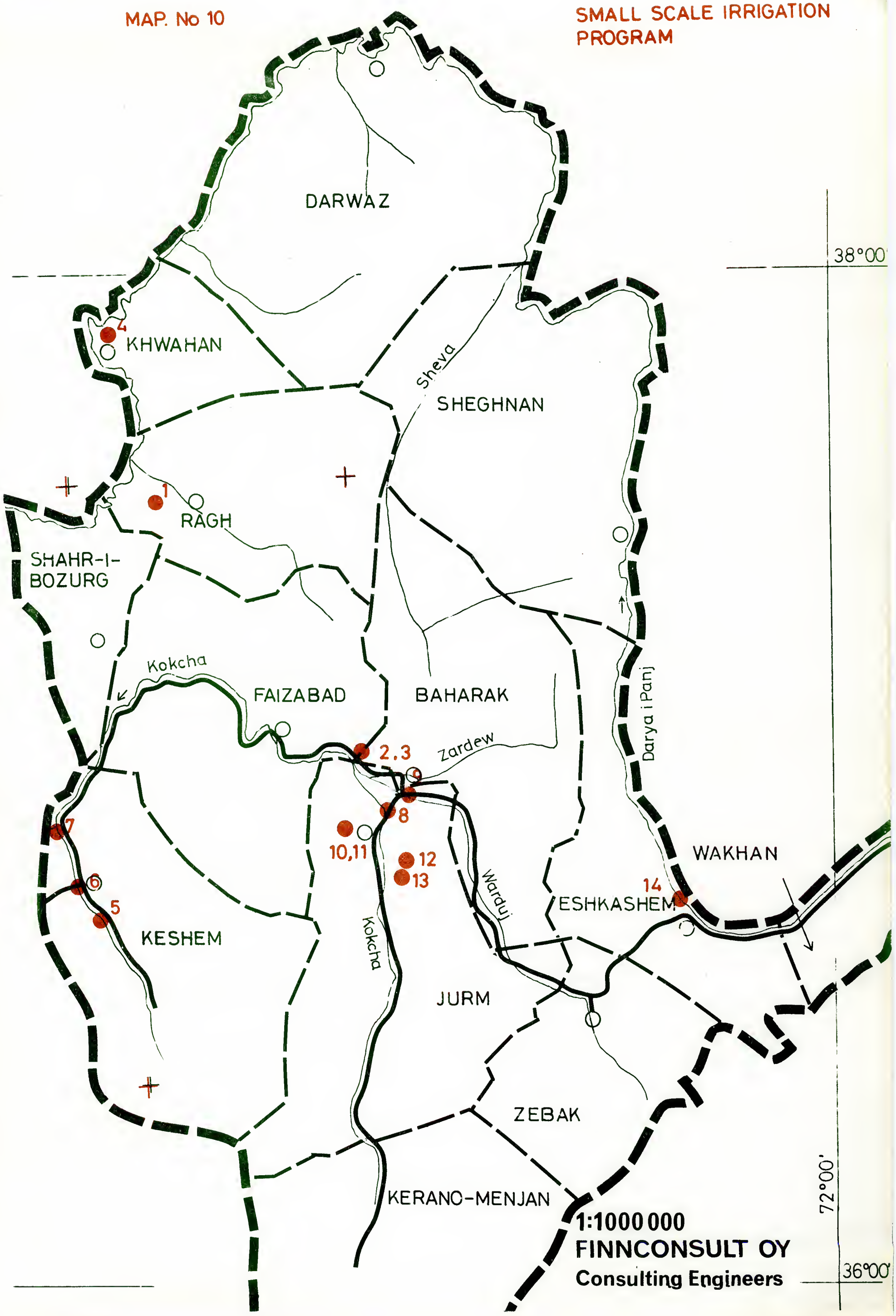
MAP. No 10

SMALL SCALE IRRIGATION PROGRAM



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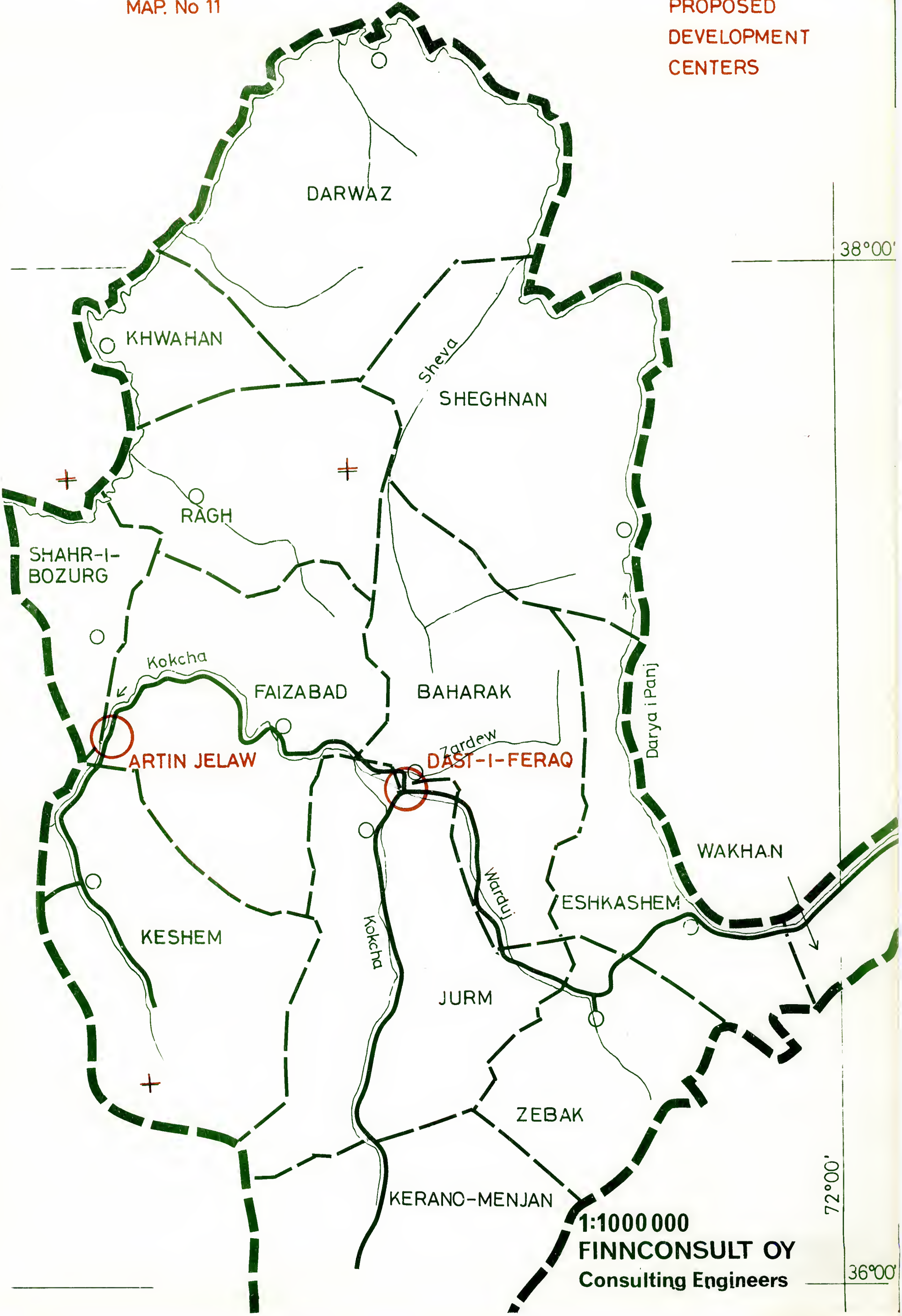
MAP. No 11

PROPOSED DEVELOPMENT CENTERS



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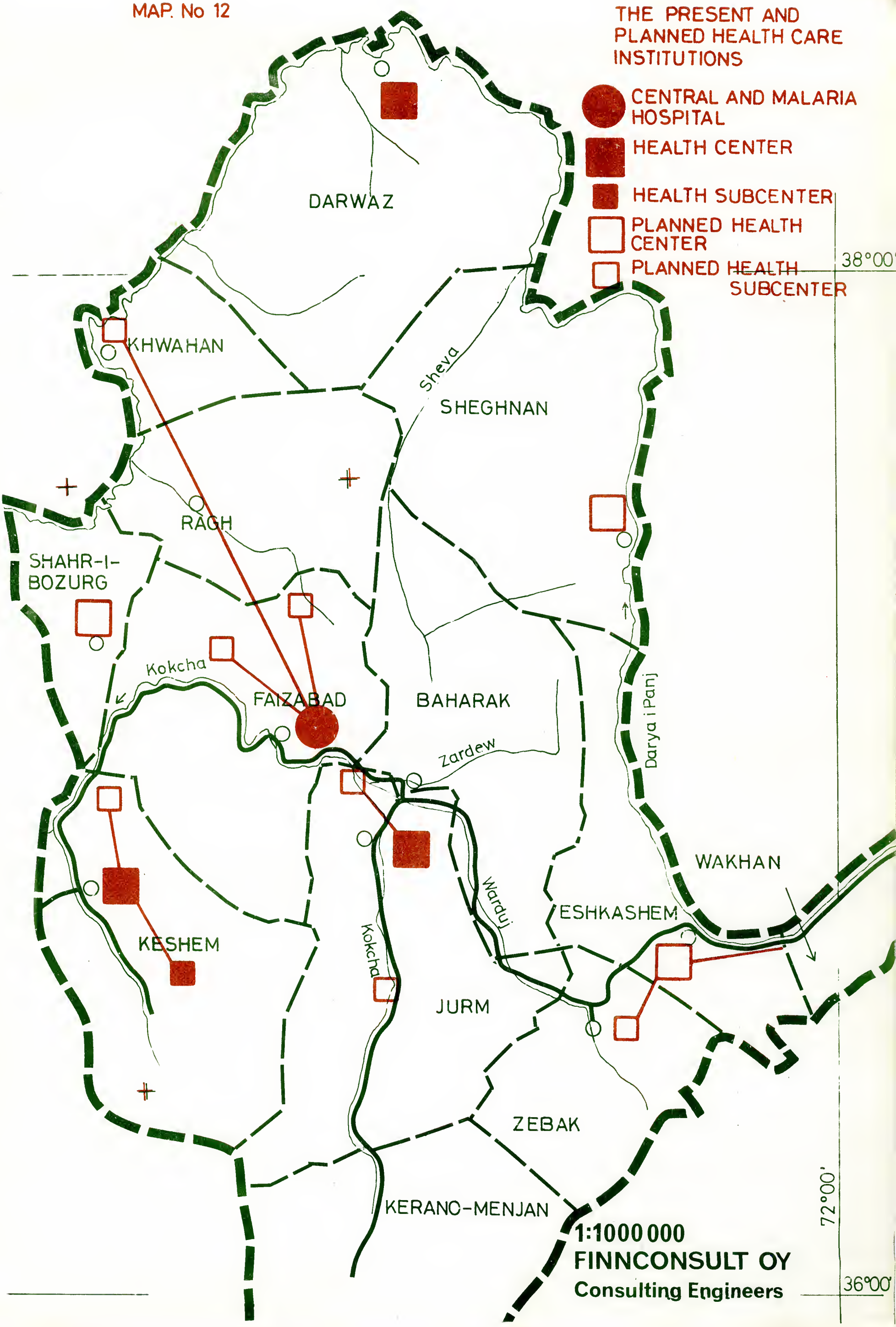
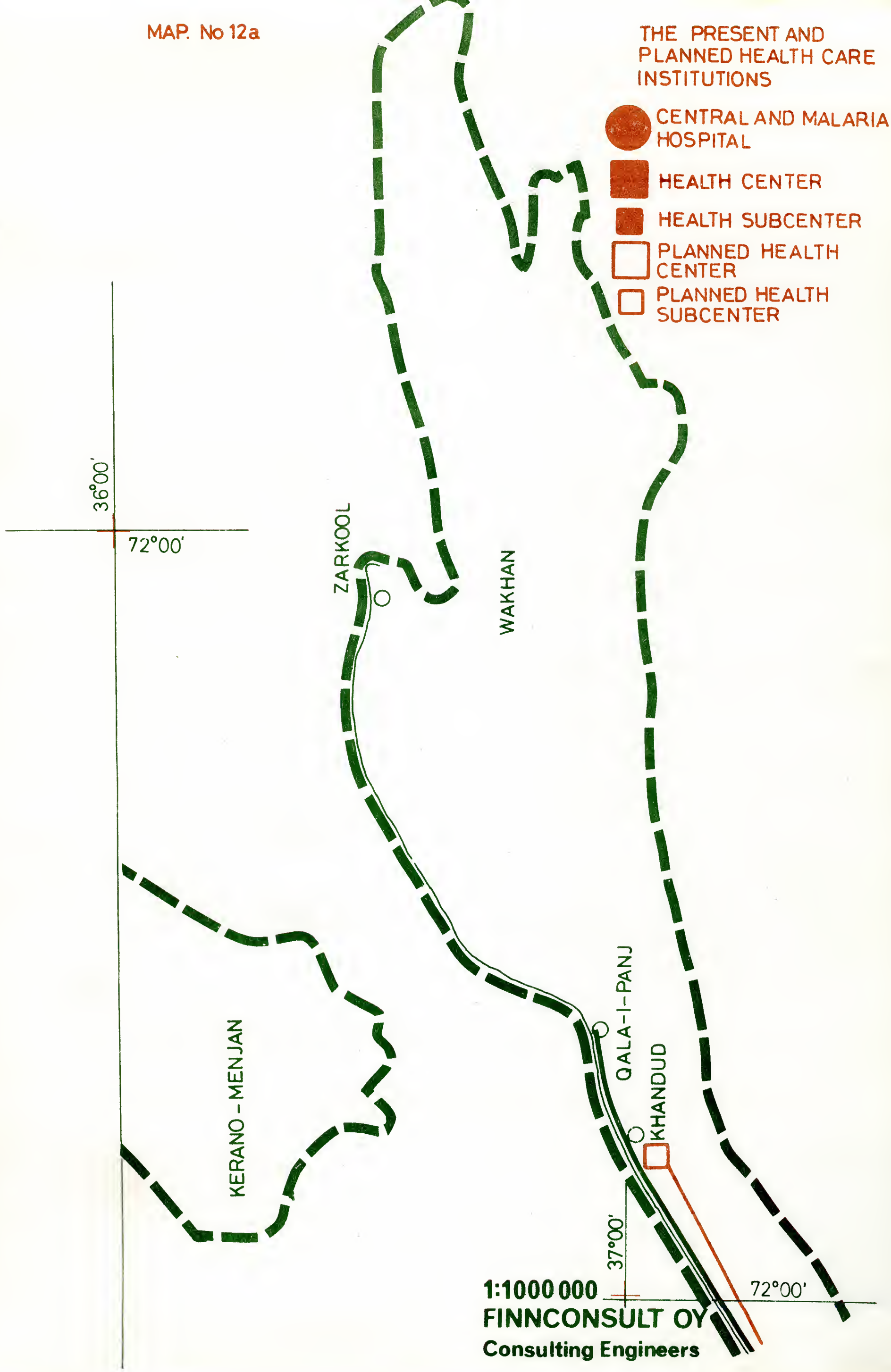


MAP. No 12

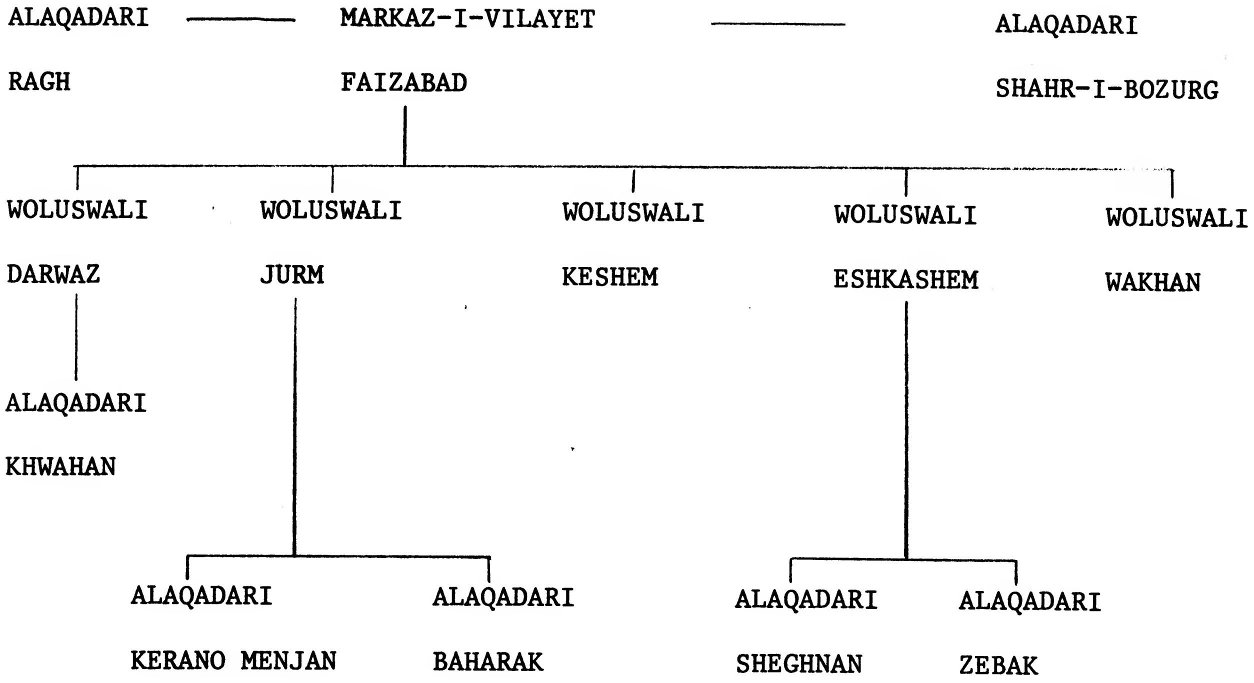
THE PRESENT AND PLANNED HEALTH CARE INSTITUTIONS



MAP. No 12a

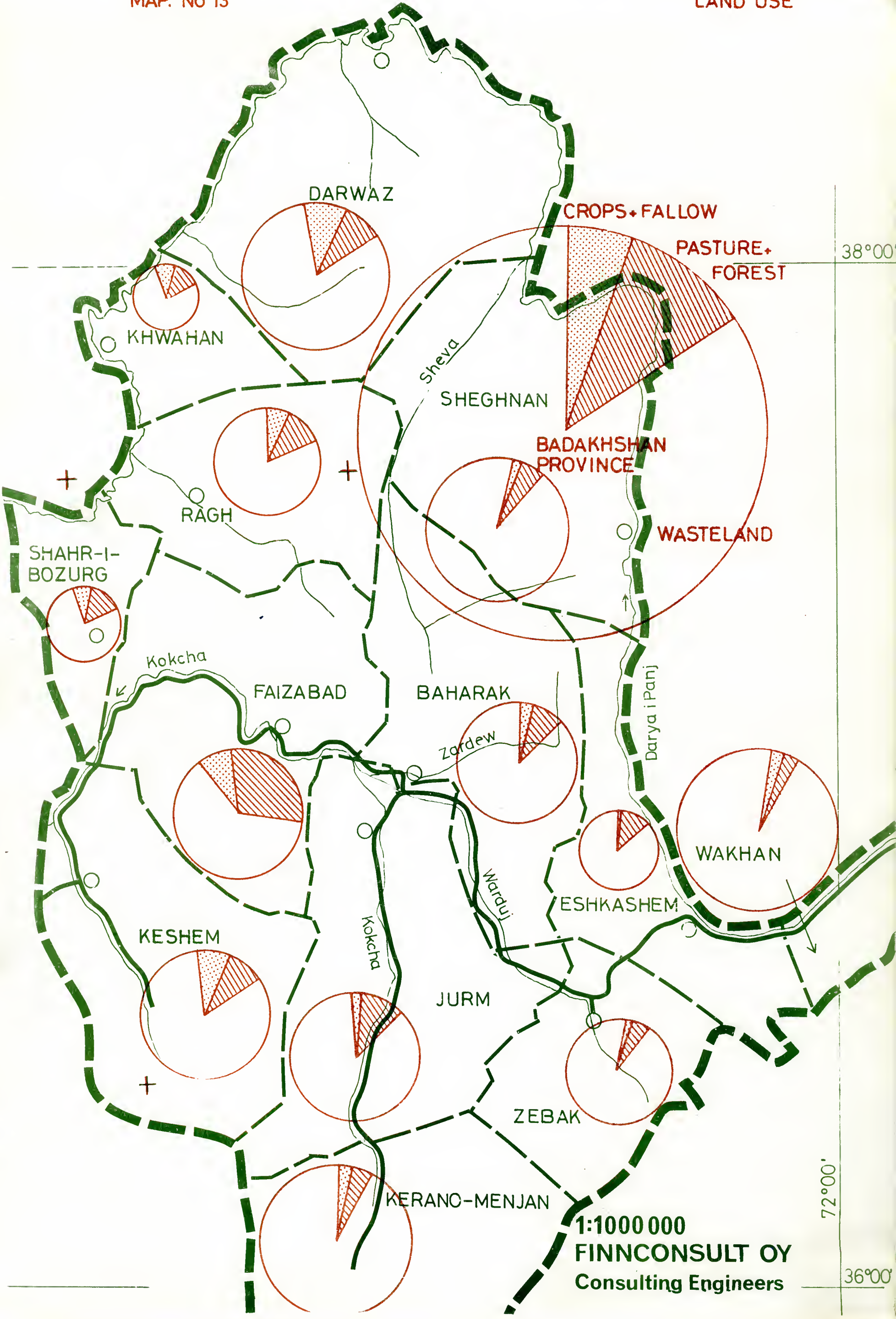
THE PRESENT AND PLANNED HEALTH CARE INSTITUTIONS

BADAKHSHAN PROVINCE



The administrative areas are shown in map no. 2.

LAND USE



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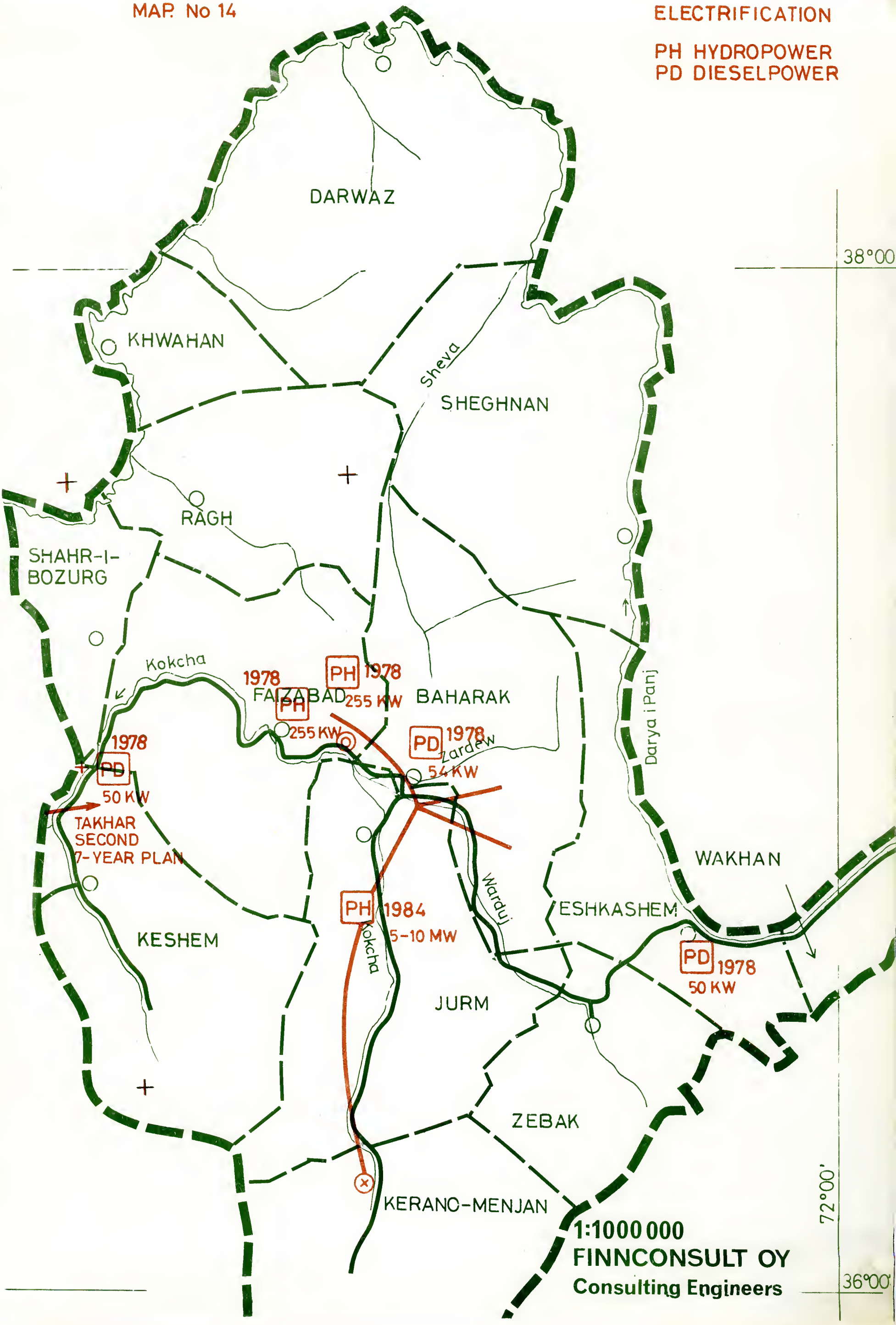
MAP No 14

ELECTRIFICATION

PH HYDROPOWER
PD DIESELPOWER



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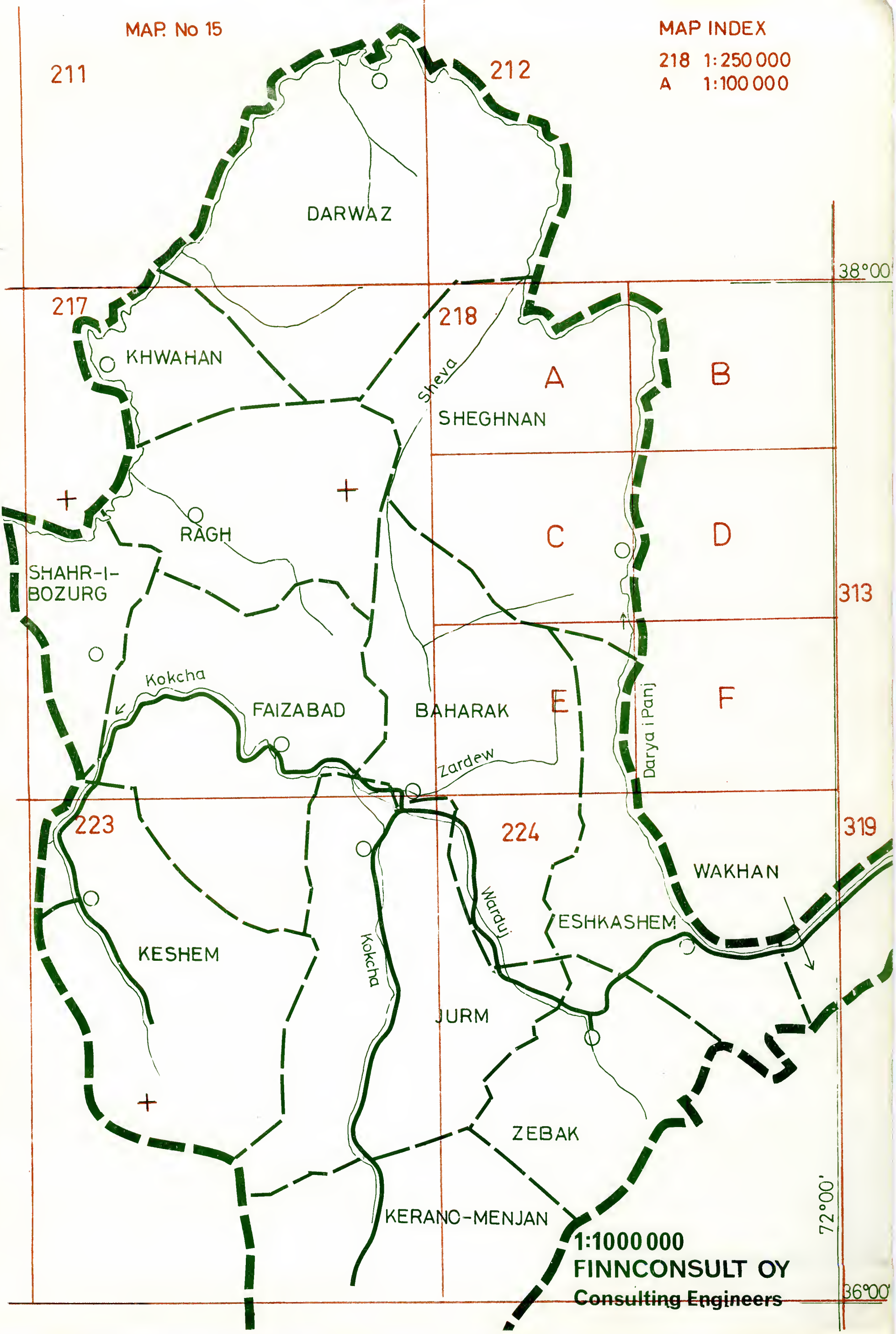
MAP. No 15
MAP INDEX
218 1:250 000
A 1:100 000
211
212
217
218
223
224
313
319
38°00'
36°00'
72°00'
A
B
C
D
E
F
DARWAZ
KHWAHAN
SHEGHNAN
Sheva
RAGH
SHAHR-I-BOZURG
Kokcha
FAIZABAD
BAHARAK
Zardew
Darya i Panj
WAKHAN
ESHKASHEM
Wardui
KESHEM
Kokcha
JURM
ZEBAK
KERANO-MENJAN
1:1000 000
FINNCONSULT OY
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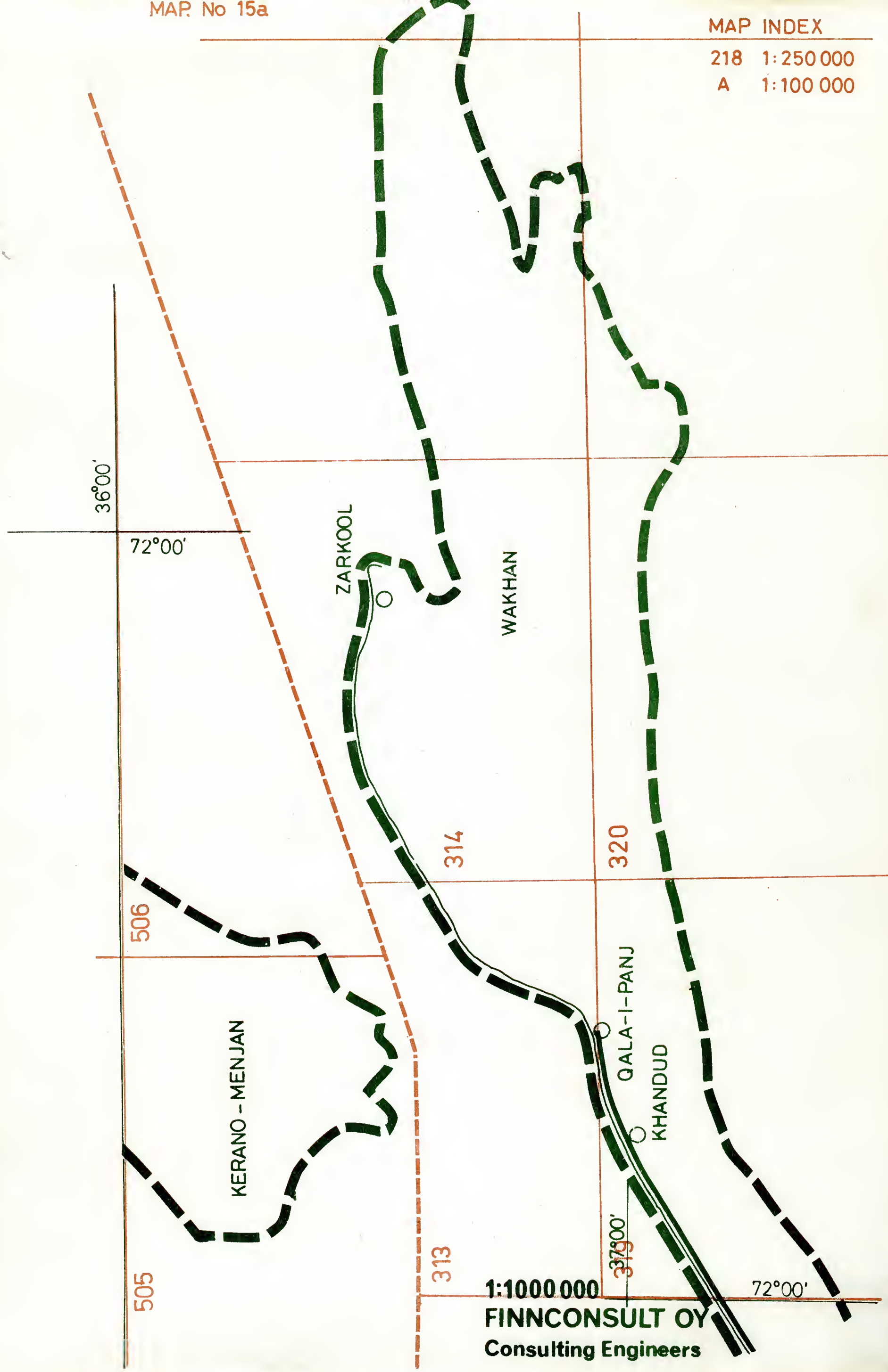
MAP No 15a


MAP INDEX
218 1:250 000
A 1:100 000
36°00'
72°00'
ZARKOOL
WAKHAN
314
320
506
KERANO-MENJAN
QALA-I-PANJ
KHANDUD
505
313
37°00'
319
72°00'
1:1000 000
FINNCONSULT OY
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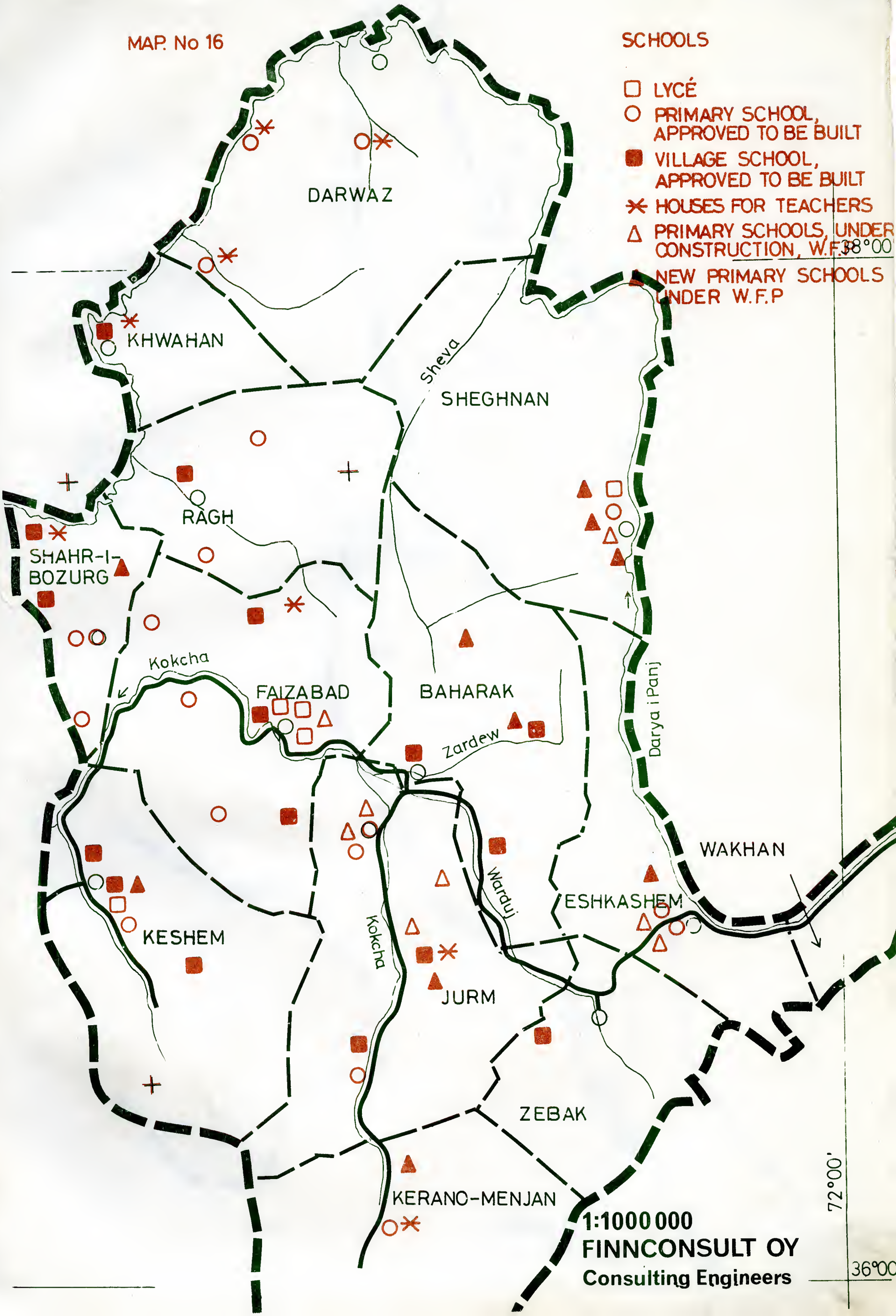
MAP No 16


SCHOOLS
□ LYCÉ
○ PRIMARY SCHOOL, APPROVED TO BE BUILT
■ VILLAGE SCHOOL, APPROVED TO BE BUILT
✳ HOUSES FOR TEACHERS
△ PRIMARY SCHOOLS, UNDER CONSTRUCTION, W.F.P
▲ NEW PRIMARY SCHOOLS UNDER W.F.P
38°00'
DARWAZ
KHWAHAN
SHEGHNAN
Sheva
RAGH
SHAHR-I-BOZURG
Kokcha
FAIZABAD
BAHARAK
Zardew
Darya i Panj
WAKHAN
KESHEM
Kokcha
Warduj
ESHKASHEM
JURM
ZEBAK
KERANO-MENJAN
72°00'
36°00'
1:1000 000
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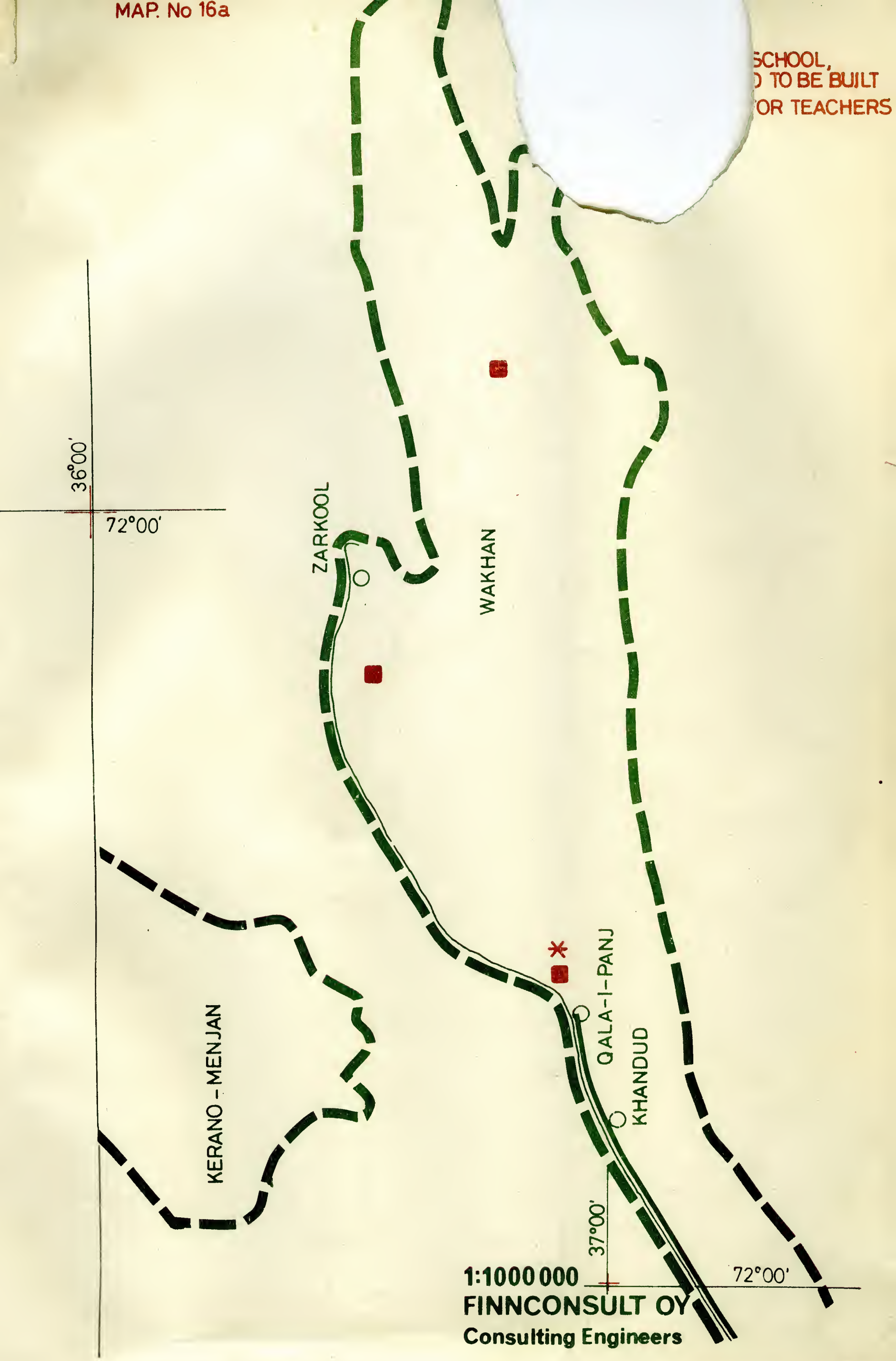
MAP. No 16a



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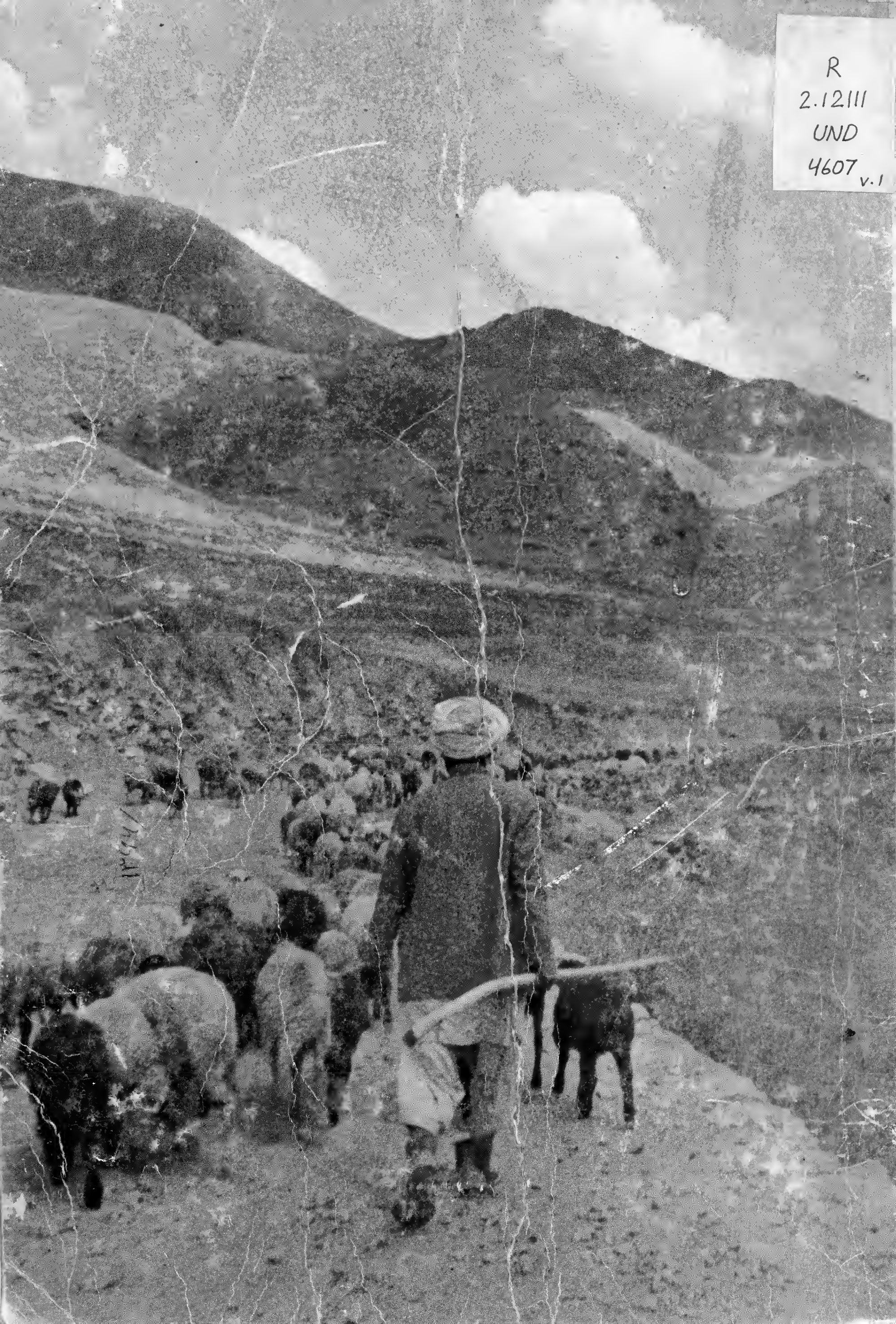

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3.2
Analysis of resources and potentials, district by district

3.2.1
Faizabad

The district described here under "Faizabad" consist of the Centre of the Province (MARKAZ-I-VILAYET) and the alaqadaries Ragh and Shahr-i-Bozurg which report directly to the Centre.

3.2.1.1
Location and Geology

Faizabad, Ragh and Shahr-i-Bozurg are located in the central western part of Badakhshan, which is the lowest geographical area in the province. The River Kokcha flows through Faizabad, Darya-i-Panj on the northern border of Shahr-i-Bozurg and the western border of Ragh. The river bottoms are about 1 200 metres above sea level. The river banks are quite steep, so no large agricultural areas have been formed in the valleys. The height of the mountains in this area varies manily between 2 000 and 3 000 metres; only the very eastern parts of Faizabad and Ragh are higher. The mountains are penetrated by numerous subsidiaries of the two rivers, but most of these subsidiaries carry water only in the spring time. There are remarkable water resources in the main rivers, but on the mountains the main source of water is the melting snow in the spring time.

The hill slopes are covered mainly by loess, which is suitable for cultivation. The known mineral resources consist of minor quantities of low quality iron ore and alluvial gold. Near Faizabad city there are some warm springs.

The climate is mild but dry. In Faizabad city, the average temperature varies from about 0° in January to about 25° Centigrade in July, the extremes being about minus 9° Centigrade and about 38° Centigrade. Throughout the year, the daily changes are quite big. Higher on the mountains the weather is colder.

The mean precipitation is about 500 mm yearly, and it usually rains in February, March and April only. The lower river valleys are never covered by snow for longer than a few days at a time, but on the mountains over 2 000 metres over sea level the snow coverage can remain for a month or two.

The total land area of Faizabad is 3 206 sq km, of Ragh 2 663 sq km and of Shahr-i-Bozurg 890 sq km. The distribution of the land area between forests, pastures, agricultural fields and waste land can be seen in table no.5. The forests consist mainly of pistachio and juniperus type of scrubs and have been over utilized by man for centuries. The agricultural lands are mainly located on the hill slopes, and cannot be measured exactly.

3.2.1.2
The people

It is estimated that there are about 130 000 inhabitants in Faizabad, 50 000 in Ragh and 35 000 in Shahr-i-Bozurg. The population density is the highest in Badakhshan, about 40 inhabitants per sq km in Faizabad and Shahr-i-Bozurg, and about 24 in Ragh. See tables nos. 1 to 4.

The main ethnic groups are Tajiks and Uzbaks, in Ragh and Shahr-i-Bozurg nearly all the people are Tajiks.

In this area, the population is quite evenly distributed over the hills and valleys of the smaller tributaries, the valleys of the rivers Kokcha and Darya-i-Panj being mostly too steep and unfriendly for a vast population.

The main occupation is farming and animal husbandry, both on a small scale. A small number of artisans and merchants serve the local needs.

The skills and methods are mainly traditional.

In the capital,Faizabad, around 20 per cent can read and write, but in the countryside only approximately 2 to 5 per cent are literate. The young people are better educated, but because of the lack of possibilities to obtain suitable work i Badakhshan, most of them move out of the province.

3.2.13
Potentials

Agriculture

Because of the relief, the potentials for irrigation are very small. The valley of the Kokcha river is wide enough only in the neighbourhood of the city of Faizabad. This valley is already partly irrigated and the rest is under construction. In the tributaries the water flow does not last long enough for irrigation purposes. Where available, spring water is used for irrigation. Fertilizers are not commonly used.

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Volume III SECTORAL REPORTS

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12. NUMBER OF LIVESTOCK
13. MEAN PRECIPITATION IN FAIZABAD
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15. TEMPERATURES IN FAIZABAD
16. ROAD CLASSIFICATION, KAMPSAX
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10. SMALL SCALE IRRIGATION SCHEMES
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12. HEALTH CENTRES
13. LAND USE
14. ELECTRIFICATION
15. MAP INDEX 1:250 000 and 1:100 000
16. SCHOOLS

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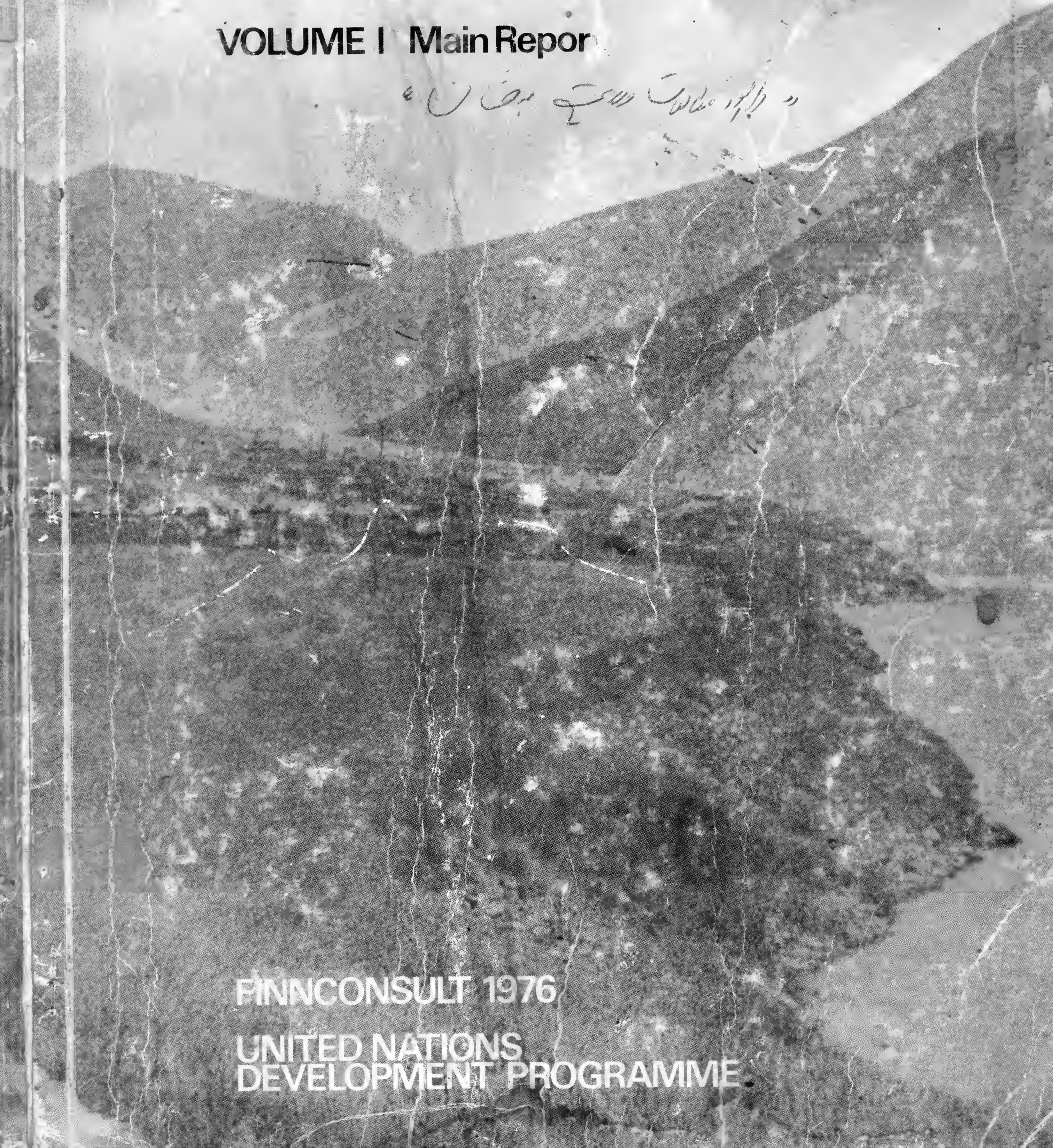
SOCIO-ECONOMIC SURVEY OF BADAKHSHAN

VOLUME I Main Repor

در باره مطالعات سروی بدخشان



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UNITED NATIONS
DEVELOPMENT PROGRAMME

The Republic of Afghanistan   Ministry of Planning

SOCIO-ECONOMIC SURVEY OF BADAKHSHAN

VOLUME I   MAIN REPORT

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PREFACE

At the request of the Government of the Republic of Afghanistan, the United Nations Development Programme commissioned Finnconsult Consulting Engineers to make a socio-economic survey of Badakhshan province.

Finnconsult received this commission at the end of August, 1975, and the Finnconsult team arrived in Afghanistan in October 1975. The sectoral field studies were completed in October and November, and the sectoral reports were delivered for evaluation in December 1975. The Finnconsult Project Manager stayed in Kabul until late February 1976 for further discussions with the government authorities and foreign aid missions.

From early May until late July 1976, a minor Finnconsult team, strengthened by locally assigned experts, completed the field survey according to the wishes of the Government and drafted the main report. A second draft was then elaborated in Finland and discussed in Kabul by the team leader in mid-September. The final report was worked out in Finland and delivered late October, 1976.

The final report, submitted herewith, consists of two volumes of which Volume I contains the inventory of the Badakhshan province and an outline of a regional development plan. Volume II presents the proposals for development projects and programmes. The sectoral reports are published separately as Volume III.

The government co-operating agency fot the project was the Ministry of Planning, and within the Ministry the project was housed in the Department of Social Services.

In close co-operation, the Ministry of Planning and Finnconsult have now prepared a series of proposals for development projects and programmes in a priority order, which form a practical basis for development planning. The plan will then be subject to funds and human resources available. Thus it is not intended that all the proposals be implemented, at least during the present 7-year planning period.

In the near future, the most important task will be the development of the implementing organization. including the research and evaluation function, in Badakhshan. After that, research, planning, implementation and evaluation should form a continuous procedure, when proposals presented in this report would also be subject to alterations and improvements according to the actual needs of the people of Badakhshan and the national economy of Afghanistan as a whole.

Helsinki, October, 1976

Finnconsult

ACKNOWLEDGEMENTS

The sectoral field surveys and basic data finding during the fall of 1975 were accomplished by the following Finnconsult team:

Name	Post title
Mr. Markku Visapää	project manager, regional development economist
Mr. Erkki Hietanen	assistant to project manager
Mr. Kalevi Virri	expert in crop production
Mr. Gösta Broberg	expert in livestock and animal husbandry
Mr. Stig Johansson	expert in geology
Mr. Matti Meriluoto	expert in forestry
Mr. Antti Salmela	expert in handicrafts and industries
Mr. Matti Rantala	expert in water and power development
Mr. Jukka Rausti	expert in public health and education
Mr. Björn Silfverberg	expert in transport and communications

At the Ministry of Planning, Mr. Alam Rechnou, Director General of Social Services, was in charge of the project, assisted by Mr. Omar and Mr. Samim, engineers.

Every Finnconsult expert had numerous contacts with Afghan government officials and foreign experts working in Afghanistan. A list of these contacts is attached to every sectoral report, Volume III.

During the evaluation period of the sectoral reports, at the end of 1975, Mr. Tapani Katara, Finnconsult agro-economist, visited Kabul and had a series valuable discussions with several government officials and foreign experts.

In May 1976, a team was organized consisting partly of Finnconsult experts, partly of experts assigned locally in Kabul:

Name and organization	Post title
Mr. Antti Salmela Finnconsult	development economist, team leader
Mr. Tapani Katara Finnconsult	agro-economist
Mr. Pekka Hämäläinen Finnconsult	expert in irrigation and road planning
Prof. Louis Dupree Kabul University	expert in sociology
Mr. Mohd. Eslam, Engineer Ministry of Public Works	expert in road planning
Mr. Mohd. Aziz, Engineer Ministry of Water and Power	expert in irrigation
Mr. Ghulam Rabbani, Engineer Ministry of Water and Power	expert in electrification
Mr. M.Z. Akbari, Engineer Ministry of Agriculture	expert in forestry and agriculture

In this team, the work of every member was equally important in respect of the accomplishment of the field survey and also the fact-finding phase in Kabul.

We wish to express our special thanks to Mr. Alam Rechnou, Director General, Social Services, at the Ministry of Planning, who not only directed the project with a firm hand but also gave us valuable advice and assistance, being himself an expert in the conditions in Badakhshan.

Most of the burden of practical work at the Ministry caused by this project, was, however, borne by Mr. S. Nejat Hussaini, Director, Development of Education, High Education and Culture. We wish to express our sincere thanks to Mr. Hussaini and his assistant, Mr. M. Maher Alimi, who also assisted us in various practical matters. In this context, we also wish thank Mr. Amiri, Director General of Engineering, Cartographic Institute, who did a great deal of extra work because of our map requirements.

In Badakhshan, Mr. Taj Mohammad Wardak, the Governor of Badakhshan, gave us most valuable assistance, both in person and through his staff throughout Badakhshan.

Mr. Shahy, Director General, R.D.D. Badakhshan, and Mr. Abdul Saddeque, Construction, R.D.D. Badakhshan, gave us most valuable assistance during the field survey, not only in the work itself but also in such personal matters as accommodation and guidance.

In both phases of the work, the Finnconsult Office was established at Hotel Number One in Faizabad. In addition to a good hotel service, the hotel manager, Mr. Abdul Rahim, gave the team plenty of assistance on various practical matters. From time to time, Mr. Rahim was the only communication link between the travelling sub-teams.

We also wish to thank the personnel of the UNDP Office in Kabul for both good co-operation in the work performed and for personal advice and help.

Among the various foreign experts and other persons who have contributed to the contents of this report through personal discussions and by supplying supporting information, particular thanks are due to Mr. Ronald G. Petocz, who has spent about three years of his life in Wakhan, and Mr. Tom Barfield, who has travelled from Kunduz to Dasht-i-Ish with the nomads and lived 18 months together with the nomads in Badakhshan.

The members of the two Finnconsult teams wish to express their sincere gratitude to all those people who have collaborated with them.